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ABSTRACT

A project developed and tested methods to reduce sex-role stereotyping in occupational education programs. A total of 460 students completed two surveys that obtained information on background, education and career plans, influences on choice of occupation, perceptions of support for nontraditional career choice, and perceptions of occupational sex-stereotyping. A parent interview questionnaire determined parents' opinions about factors important in choosing a career. A program of classroom activities was developed for use with eighth and tenth graders. It included two short filmstrips, Job and Gender, Parts I and II; parent and student information on career options and employment data; classroom discussions; and required student discussion with a parent about career decision-making. (Analyses of the first survey and parent interviews and the experimental effort are provided.) Conclusions were that parents, siblings, and peers were important influences on student attitudes towards nontraditional careers. Females were more apt to consider nontraditional choices. Males evidenced greatest change in the direction of less stereotyped attitudes. By eighth grade the influence of sex-role socialization was evident. Males and females became more alike in characteristics an individual would consider in choosing an occupation. Even a brief contact period produced change toward less stereotypic attitudes. (YLB)

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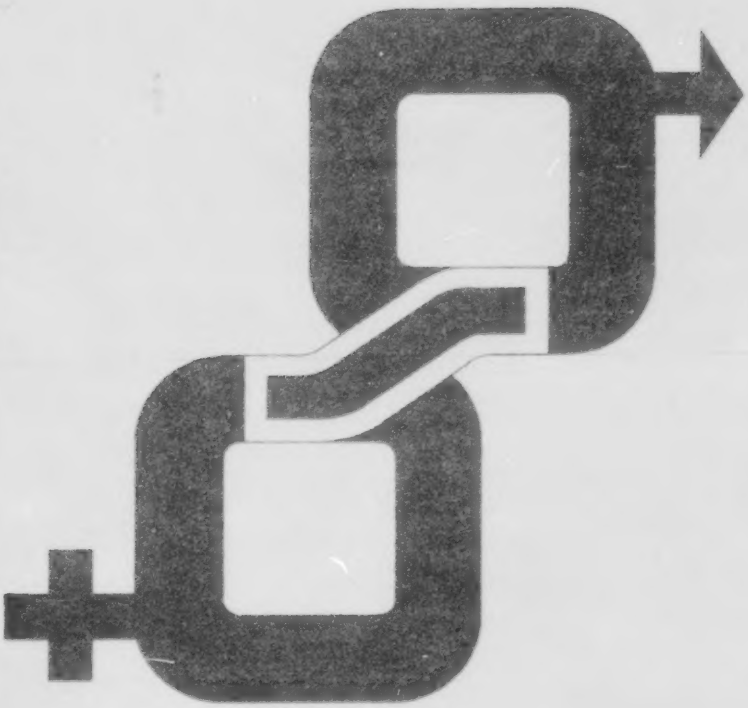
Expanding Student Opportunities in Occupational Education: Methods to Reduce Sex-role Stereotyping in Program Choice



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Institute for Occupational Education
Department of Education
New York State College of Agriculture and Life Sciences
Cornell University
Ithaca, New York 14853

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This report was developed by the Cornell Institute for Occupational Education, a component of the New York State Research Coordinating Unit located at Cornell University, Ithaca, New York. Support for this project was provided through the New York State Education Department, Office of Occupational and Continuing Education, under the terms of grant # VEA-80-3A-1117GS, and funded from the Vocational Education Act Amendments of 1976.

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FOREWORD

This report represents the final phase in a series of efforts concerning the identification of factors associated with stereotype sex-role choice in secondary occupational education in New York State. I believe these results will contribute to the expansion of career opportunities for New York youth. Procedures have been developed to help young persons consider potential occupations on the basis of job characteristics rather than on traditional sex-role assignments.

The mission of the Institute for Occupational Education at Cornell University is to improve occupational, adult and continuing education through teaching, research, evaluation, and dissemination. This project contributes to this mission through the development of materials and procedures for expanding career opportunities in occupational education.

The project staff for this final phase of the study consisted of Dr. Helen C. Veres, Project Director, and Dr. Mary Margaret Carmichael, Research Associate. I am exceedingly grateful to Drs. Veres and Carmichael for their contributions at all stages of the project and for their assumption of responsibility for completion of this phase of the project. This report is the result of their effort, insight and persistance. Their work has resulted in several very significant steps school districts can take to materially reduce stereotype career choice on the part of young people in their respective districts. I strongly recommend this report for your use.

James A. Dunn, Ph.D.
Professor of Education and
Director, Institute for
Occupational Education

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This project has benefited from the efforts of many individuals who have contributed their knowledge, efforts and experience at all stages of project activities. We wish to express our appreciation to all the administrators, counselors, teachers, and especially the students and their parents who have provided assistance. In particular, a number of individuals deserve special recognition for their dedication in their participation with the project.

We are indebted to members of the Bureau of Special Programs in Occupational Education, New York State Department of Education, for their recognition of the need for research in this area of expanding educational opportunities and their support and encouragement for this entire project. Carol Jabonaski, Coordinator of the Occupational Civil Rights Coordinating Unit, NYSED, was the Coordinator of Special Programs during the earlier phases of this project. Mary Ann Etu is the present Coordinator, and to both we express our appreciation for their support, concern and readiness to assist us.

This is the third and final phase of a multi-year project, and special thanks must go to all those who gave such dedicated work at earlier times. The original project was begun by Drs. LaVerna M. Fadale and Helen C. Veres. Dr. Mary D. Ott gave guidance as director of the second phase, and she prepared the foundation for this present research. Drs. Gwendolyn Lewis and Helen C. Veres directed the design and planning of this present phase. Dr. Mary Margaret Carmichael has been associated with the project throughout all three phases. Dr. James A. Dunn, Director of the Institute for Occupational Education, has been a constant source of support throughout all phases of this project.

All personnel from the schools participating in this project deserve special recognition for their concern about the problems of sex-stereotyping in education today. Although the school districts were randomly

selected, the cooperation of these particular schools in the study and their commitment to quality education is to be commended. From our visits and our conversations with you, we know we have had the privilege of working with the very best of New York State educators. Although the names of the schools belonging to the control and the experimental groups are not identified in this report, we wish to recognize the persons who have provided such great assistance to us. The schools and their staff members, in alphabetical order, are:

Charlotte Senior High School, Rochester, NY

Mr. William Graf, Principal. Mr. Charles White, Vice-Principal, made arrangements for the study and Mr. Joseph Baldini, History Teacher, truly went the "second mile" in his deep concern and his assistance to the project.

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Mr. William Tkach, Principal. Mr. Joseph Versage, Guidance Counselor, was most helpful in making arrangements and following up on all aspects of the project.

Hornell Senior High School, Hornell, NY

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Interim Junior High School, Rochester, NY

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Johanna Perrin Junior High School, Fairport, NY

Mr. James Valentine, Principal. Mr. Valentine provided his helpful cooperation and assistance in arranging for his school's participation in the study.

Madrid-Waddington Junior-Senior High School, Madrid, NY

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Martha Brown Junior High School, Fairport, NY

Dr. Calvin Deyermond, Principal. Dr. Deyermond made all arrangements for his school's participation. We appreciate his sincere interest in the project.

St. Lawrence Junior-Senior High School, Brasher Falls, NY

Mr. Jack Smith, Principal. Mr. Warren Dyke, Guidance Counselor, displayed thoroughness and concern in coordinating all preparations for project activities.

Two additional people were, in large part, responsible for the success of the sampling design. Their concern for research in this area was a key factor in the support given to this study. Our most sincere appreciation goes to both of you: Ms. Ruth DeRosa, Sex Equity Supervisor, Rochester City School District, and Dr. Myles Bigenwald, Administrator for Planning, Evaluation and research, Fairport Central Schools.

Although it is impossible to mention them by name, the nearly 600 students who participated in some phase of the study deserve special mention. To these students and their parents, we also say "thank you" for sharing your perceptions of the world of work.

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To all of these colleagues, we express our sincere appreciation.

Helen C. Veres, Ph.D.
Project Director

Mary Margaret Carmichael, Ph.D.
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I
INTRODUCTION

The U.S. Vocational Education Amendments of 1976 (Title I, Part A, Sec. 101) call for states "to develop and carry out such programs of vocational education within each state so as to overcome sex discrimination and sex stereotyping in vocational education programs...and thereby furnish equal educational opportunities in vocational education for persons of both sexes." This mandate came in response to the observation that in many occupational programs, the sexes were not equally represented. In New York State out of the twenty-five secondary occupational programs, thirteen are non-traditional for females (i.e., enrollments are less than 20% female, and frequently as low as 3% female). Three of the programs are non-traditional for males (i.e., enrollments are less than 20% male). Although educators are seeking ways to encourage full participation of both sexes in these occupational programs, these statistics are typical of enrollments found throughout the nation.

Beginning in 1978, the Cornell Institute for Occupational Education undertook an investigation of some of the factors which affected sex-stereotyping in occupational education programs. This study identified factors in secondary trade, industrial and service programs that are associated with sex-segregated enrollments and that have a potential for change. Three programs that are nontraditional for females--construction and maintenance trades (1.5% female), drafting (10.7% female) and electronics (3.2% female)--as well as one program that is nontraditional for males--personal services (2.7% male)--were the principal targets of the study.

Although this phase of the project concentrated on students in these four occupational programs, information was obtained on some aspects of nine different program areas. Since the various programs have many characteristics in common, it is likely that the findings are generalizable to students in other presently sex-stereotyped programs.

The three most important factors found in the study to influence student career choice were parental influence, peer influence and perceived job opportunities. Other factors found to be important were the influence of school personnel and the prevailing school atmosphere vis-a-vis non-traditional courses of study. The identification of factors that are associated with sex-role stereotyping in enrollments in trade, industrial and service programs is a necessary but not sufficient step to fulfill the federal mandate to overcome sex stereotyping in vocational education programs. The next step is to develop and test methods to overcome the stereotyping. The present study addresses this goal.

Objectives

The objectives of this project are:

1. To assemble various materials and techniques intended to reduce sex role stereotyping in occupational education program enrollments.

2. To organize these materials and techniques into programs tailored for eighth grade students, tenth grade students, and students' parents. These materials can later be used with appropriate local modifications by any school district.

3. To assess the short-run efficacy of these programs in specific settings. Efficacy is operationally defined as effectiveness in changing toward less sex-stereotypic attitudes about occupational choice. In the case of students this would mean pre-disposing students toward enrollmet in classes which currently are populated mainly by students of the opposite sex. For parents it would mean increased willingness to consider occupations for their own son or daughter which are usually engaged in by the opposite sex, and to support their own child's non-sex-stereotypic attitudes and behaviors.

II

OVERVIEW OF THE RESEARCH LITERATURE

The decade of the 70's saw a dramatic increase in the amount of literature about sex roles and sex-stereotyping. Both the popular and the research literature have offered extensive treatments of topics such as the development of sex roles, changing roles, occupational stereotyping, the societal effects of stereotyping and other issues. This information continues to grow as writers and researchers attempt to shed new light on questions related to sex roles and sex role stereotyping.

Summarizing this ever-increasing body of literature is a difficult task. Thus, although this section does not present an exhaustive treatment of the available literature, some studies which provide a context or rationale for the present research are presented as background.

Influences on Career Choice

The process of choosing a career begins early. Even pre-school children have acquired some information and formed opinions about occupational roles. Looft (1971) studied the vocational aspirations of first and second grade students. While the boys in the study named 18 different occupations they would want to enter, the girls named only 8 different careers, most naming nurse or teacher as their choice. Other studies (Rosen & Aneshensel, 1978; Kirchner & Vondracek, 1973; Hollender, 1971) consistently show that boys and girls view occupations in a stereotyped fashion, considering some occupations as appropriate for men, others for women.

This limiting of career options by girls seems to be related to their understanding of conditions in the work world rather than lack of aspiration. One study (Beuf, 1974) discovered that girls often said that the occupation they would select "if they were a boy" was their real choice although they knew that they could not attain it as a girl. In another study conducted with older

students, Farmer and Bohn (1970) administered the SVIB-Women to a sample of young women using two sets of instructions. In the first administration the women completed the survey using the standard instructions. Then, they completed the survey with instructions to pretend that family and career constraints did not exist. In the second administration, women's scores on career scales increased dramatically suggesting that home-career conflict played an important role in affecting women's career choice.

Extensive research exists documenting the process of early sex-role socialization. For example, parents treat male and female children differently right from birth (Rubin, Provenzano & Luria, 1974). They give them different toys to play with (Denzin, 1970) and assign them different types of household tasks (Lynch, 1975). By the time they enter school, children have already acquired preferences for "appropriate" sex roles and describe the sexes in stereotypic ways (Kagan, et al. 1961).

During their school years, boys and girls are exposed to still more reinforcement of stereotypic sex roles. Studies of school textbooks show that men and women are portrayed in stereotyped roles and occupations (Women on Words and Images, 1972; Weitzman & Rizzo, 1974). Numerous studies have confirmed that teachers ascribe different characteristics to boys and girls and prefer certain types of behavior in boys and girls. For instance, teachers have been found to be more approving of boys than girls (Lee & Wolinsky, 1973) and to interact more with boys (Brophy & Good, 1970).

Television and other mass media also serve to reinforce sex-role stereotypes (Sternglantz & Serbin, 1974; Steiger et al., 1979). Women and men are generally portrayed in stereotypic roles (e.g., women as passive; men as dominant and competent) and occupations. Such images are frequent on a medium which is viewed several hours each day by young persons.

By the time boys and girls reach adolescence, they have been subject to years of overt and subtle sex-role socialization processes and have acquired fairly clear impressions of "men's work" and "women's work." Farris (1978)

indicates that by the teen age years, young males and females differ in numerous ways in their information about occupations and in their plans for occupational training. Some of these are:

- Males expect to have a career.
- Both sexes appear unaware that most married and unmarried women work outside the home.
- Females have lower occupational aspirations and limit their occupational choices to those traditional for their sex.
- Both sexes believe women's occupational opportunities are more limited than men's.

Changing Stereotypic Attitudes About Career Choice

As described above, there is ample documentation in the research literature that adolescents view careers in stereotypic fashion and are likely to limit their own career choices according to what they think is appropriate or attainable for males and females in our society. The effect of such stereotypes on occupational choice is that individual interests and abilities often take a subordinate role in the selection of a career. Women may avoid careers in math and science; men may steer away from careers involving artistic or nurturant interests.

Many of the same research studies which confirm the existence of occupational stereotyping among young persons also provide recommendations for changing stereotypic attitudes or for increasing options in occupational choices among adolescents. These writings encourage educators to undertake activities in the schools to foster sex equity in career decision-making. These recommendations for action have been strengthened through legislation. In particular, the Vocational Education Amendments of 1976 require states to carry out programs to eliminate sex-stereotyping in vocational education programs.

To assist educators in implementing this legislation, various strategies, materials and training packages focused on sex equity concerns have been developed. The greatest emphasis in remedial programs has been to address issues of sex-role stereotyping with students. The materials aimed at students include many common elements such as developing awareness of stereotyping in sex roles, awareness of sex bias and sex discrimination, or information about non-traditional occupations. Another group of programs focus on teachers and counselors. These programs generally take the form of inservice training during which individuals develop awareness of their own biases or are exposed to techniques which might be used with students. However, while the number of suggested programs and activities has been increasing rapidly, many such programs have not been evaluated for impact or effectiveness.

What have been the results of programs to try to change students' attitudes toward non-traditional careers? A study by Venter (1980) presented a special curriculum to an experimental group of sixth grade students over a six-week period. She found a significant increase in the students' preferences for non-traditional jobs at the end of the program with most of the change occurring in the female experimental group. The conclusion of the study was that curricula which present alternatives in occupational choice can be an effective method of increasing options for young persons.

Another research study (Greene, Beyard-Tyler, & Sullivan, 1981) emphasized the importance of non-traditional role-models as a means of changing adolescent sex-typed attitudes about careers. The subjects, 288 ninth grade students, read job descriptions which contained information about real-life non-traditional role models and then completed a survey of attitudes toward various occupations. A control group of students were rated only on the survey. The results showed that attitude change by students about the appropriateness of various jobs for men and women was greatest for the jobs described in the career information. Also, while females thought more jobs were appropriate for both sexes, the males were influenced more than females by reading the materials. The researchers concluded that programs which provide nonstereotyped career information and the example of role models can affect adolescents' rating of careers as appropriate for both men and women.

III

RESEARCH PROCEDURES

This section describes the design of the survey instruments, the development and selection of the materials and activities for students and the selection of the sample of schools in which activities were tested.

Design of the Study

In the earlier research effort (Ott et al., 1980), eight surveys were developed to assess the opinions and attitudes towards non-traditional occupational programs and careers of each of the following groups: occupational education students, their parents, teachers and counselors; and tenth grade general curriculum students, their parents, teachers and counselors. A number of variables were examined to identify factors which lead to the under-representation of either males or females in selected occupational programs. These variables included demographic information, students' perceptions about the attitudes of parents, counselors, male and female friends toward career decisions, students' ratings of job opportunities, their current work experience and their future career plans. The analysis of data from this study phase yielded several important findings. For the students in the study, parents were the most important source of influence in occupational decisions, followed by same sex peers, and then opposite sex peers and school personnel. Knowing the relative impact of others suggested two possible courses of action: 1) provide information and resources to those who have the greatest influence; and 2) increase the impact of school personnel when possible. It was also suggested that information about nontraditional careers and job opportunities should be presented to students and parents considerably before the time when decisions about educational programs or tentative career choices are made. These recommendations formed the basis for the present study.

A quasi-experimental design was considered to be the best method for determining whether activities conducted with students and their parents were effective in promoting less stereotypic attitudes towards students' career and program choices. This type of design required the selection of comparison groups of students, one group participating in the activities; the other group receiving no special treatment. In addition, to facilitate the generalizability of the study's results, students were to be selected from urban, suburban and rural communities.

Selection of the Sample

As an initial step in obtaining a sample of school districts for participation in the study, statistics on the composition of New York State school districts were obtained from the New York State Education Department, Bureau of Educational Data Systems. Three regions of the state were randomly selected from among the thirteen occupational education planning regions. Within these three regions, school districts were randomly chosen from among districts which included urban, suburban and rural areas. Four of the schools in these districts were designated as experimental schools; four of the schools as control schools. Administrators in these districts were contacted and their cooperation sought in permitting a sample of eighth and tenth grade students to participate in the study (see Appendix A). Eight schools in the five districts, six with eighth grade classes and four with tenth grade classes, agreed to participate.

A total sample of 552 students was obtained from the eight participating schools. Of this total, 460 students participated in both surveys. Since the two surveys were administered approximately one month apart, some students were absent for illness or other reasons at the time of the second survey. In addition, one eighth grade control class was unable to complete the second survey; this loss of a class was the greatest source of attrition between first and second survey administrations. Table 1 shows the composition of the sample according to school and grade level.

Table 1

Sample of Eighth and Tenth Grade Students by School

School	Grade 8		Grade 10	
	Survey 1	Survey 2	Survey 1	Survey 2
Control				
School 1	57	0	54	53
School 2	48	47		
School 3			70	66
School 4	47	47		
Total	152	94	124	119
Experimental				
School 5	53	53	48	42
School 6	58	48		
School 7	44	38		
School 8			73	66
Total	155	139	121	108
TOTAL EXPERIMENTAL AND CONTROL	307	233	245	227

Survey Design

Data were collected from students in the experimental and control groups by means of two surveys developed at the Cornell Institute for Occupational Education (CIOE). These surveys were composed of both multiple choice and open-ended questions. The first instrument, based on questions developed in the earlier phases of the study, was designed to obtain information about the following:

1. Background information on the students surveyed
2. Education and career plans
3. Influences on choice of occupation
4. Perceptions of support for non-traditional career choice
5. Perceptions of occupational sex-stereotyping

This draft instrument was field-tested with a sample of students from schools in the Ithaca area. Immediately following the pre-test, these students were interviewed about their reactions to the survey. Revisions were made in the questions and format of the instrument as a result of the field test data. The revised instrument was then submitted to the Division of Occupational Education Planning, Research and Evaluation of the New York State Education Department for review and approval.

The resulting survey instrument was administered to all students who participated in the study. In the schools in the experimental group, students completed the survey before any of the classroom activities took place. In control group schools, students completed the survey during regular class time. The entire instrument could be completed by students in an average time of 15 to 20 minutes.

A second instrument was developed for use 4 to 6 weeks after the first survey administration. This instrument was a shortened version of the first survey. Background questions on the students were omitted and, in the experimental group, two questions assessing students' opinions about the classroom activities were added. The average time for completion of this survey was about ten to fifteen minutes.

In addition to the two student surveys, a parent interview questionnaire was developed to use in conjunction with experimental classroom strategies to reduce occupational sex-stereotyping. Questions similar to those on the student surveys were developed to determine parents' opinions about factors important in choosing a career. The draft parent interview was also pre-tested with a small sample of adults and revised to incorporate improvements in the wording and format of questions. The final student surveys and parent interview questionnaire are included in the appendix to this report.

Design of Classroom Activities

A major goal of this research study was to develop a program of classroom activities which could be used with students in eighth and tenth grade classes to promote less stereotypic attitudes toward occupational choice. As a first step in developing a program for use in the classroom and to eliminate duplication of effort, materials developed by other researchers were examined for possible use. Both print and audio-visual materials were reviewed for their appropriateness in presenting information to students about non-stereotypic occupational choice. In reviewing materials the following criteria were applied:

1. Focus on non-stereotypic occupational information or roles.
2. Applicability to both males and females.
3. Adaptability to the time constraints (e.g., class periods) of the typical school program.
4. Appropriateness for students at junior and senior high school levels.
5. Cost of materials within normal school expenditure limits for instructional materials.
6. Availability of materials.

The recent attention focused on sex-role stereotyping and its negative consequences for members of our society has resulted in rapid growth of all types of materials and related literature. A search of the current literature on sex-role stereotyping was conducted to identify possible resources. Contacts were initiated with sex equity personnel and researchers throughout the country to identify on-going efforts and those not yet reported in the research literature. Film libraries and audio-visual centers were contacted and several sites were visited to preview non-print materials for inclusion.

The process of reviewing materials brought to light a wide variety of activities directed to an assortment of audiences. A majority of these activities were both interesting and creative in addressing the problem of sex-role stereotyping. However, many did not fit the criteria elaborated above.

A large share of the identified materials were primarily intended for use with females. Although these resources were of high quality, they showed role models of women who had entered non-traditional occupations or presented activities to examine issues of sex bias in occupations from the female perspective. For the purposes of this study, it was essential that information about non-traditional career choices and the effects of occupational sex-stereotyping be presented to all students. Hence, materials were excluded from further consideration if they were not applicable with both sexes. Other materials were excluded when their relatively high cost or their limited availability made it unlikely that a school district would be able to acquire them for use with students.

Another large body of print and audio-visual materials treats the sex-role socialization process or the societal effects of sex-role stereotyping. Research in the field indicates that opinions about sex-roles develop early and are closely tied to family and individual values and beliefs. Since the proposed time allocation for the classroom activities portion of the project was two class periods, these attitudes were considered to be resistant to change in such a limited time. Therefore, it was decided to limit the scope of the classroom activities to the effects of sex-stereotyping as it relates to occupational choice rather than the broader concept of the development of or the effects of male and female sex roles.

After reviewing materials, two short filmstrips Jobs and Gender, Parts I and II, were selected for inclusion in the classrooms teaching activities. These filmstrips were each nine minutes in length and accompanied by a taped narration. They contained interviews with both men and women employed in occupations non-traditional for their sex. The occupations shown are a male nurse, a female reporter, a male student in early childhood education, a female carpenter and a male kindergarten teacher. The individuals who were

interviewed talk about the reasons they chose their occupations, what they do in their jobs and their feelings about occupational stereotyping. Information and facts about how gender influences occupational choice are also discussed.

These filmstrips were selected since they offered exposure to several role-models of both sexes and different races who were actively engaged in non-traditional careers. They also were short enough to be presented in a typical class period and still permit time for students to discuss the important concepts about occupational stereotyping and non-traditional careers. A further rationale for the use of the filmstrip was that the recommendations from the earlier study phase and from other research emphasize that students should receive accurate and up-to-date information on non-traditional careers as well as exposure to non-traditional role models. Since real-life role models for non-traditional occupations may be hard to identify or difficult to schedule for personal visits to classrooms, the filmstrip models provide a standard treatment for all schools in the experimental group and a method which other schools might find easy to replicate.

Other parts of the planned classroom activities follow from recommendations in the research literature. Students and their parents were provided with information about career options and employment data, especially with regard to non-traditional careers. Classroom discussions among students in the eighth and tenth grade classes were held to promote interaction among peers on topics related to career decision-making and the selection of non-traditional careers.

Another of the activities required students to discuss with a parent many of the issues inherent in career decision-making. In the previous study (Ott et al., 1980), parents expressed strongly sex-stereotyped attitudes towards non-traditional educational programs and career choices. Since sons and daughters saw their parents as important influences in their choice of career, we felt that it was critical to involve parents in the decision process. Students recorded the adults' answers on an interview form. These responses and student survey responses formed the subject matter for additional classroom discussions.

A complete description of the activities used in the classrooms with students is presented in the appendix.

Other Materials

In addition to the classroom activities developed for students, two public service radio messages were produced. These 30 second messages presented information on non-traditional career choices, especially those which involve preparation through vocational education programs. One announcement centered on non-traditional female choices; the other focused on non-traditional occupations for males (see Appendix D).

The announcements were developed in cooperation with Media Services, College of Human Ecology, Cornell University. Teenage students were used to record the voices of the students in the messages to facilitate identification of young listeners with the persons in the scenarios. An adult male was used as the announcer on the tape describing non-traditional males; an adult female recorded the announcer's lines on the female version.

The completed tapes were submitted to 16 radio stations in the immediate geographic areas of the eight schools. The radio stations were selected on the basis of their demonstrated appeal to the teenage listening audience. Since students in schools which were not chosen to participate in the study were also likely to hear these announcements, letters were sent to schools and area occupational education centers to notify them of the media presentations.

IV

RESULTS: ANALYSIS OF FIRST SURVEY AND PARENT INTERVIEWS

This section presents the findings from the survey instruments administered to students and their parents. The first part of the chapter describes the general findings from the students who participated in the first survey. The second half of the chapter is a more detailed description of the findings from experimental and control groups of students. This analysis examines the impact of the classroom activities on the attitudes of the students toward non-traditional careers.

The Survey Instrument

The first survey instrument was designed to obtain information from students about topics related to career decision-making and attitudes toward non-traditional careers. The instruments were pre-coded to indicate both the school and the individual respondent. To provide for confidentiality and the anonymity of the participants, each student was asked to record his or her name or a recognizable abbreviation or pseudonym on a sheet of paper with a code number on it. These sheets were used only to match code numbers to respondents for the second survey administration. No names were used on the survey instrument itself.

The questions on the instrument included both open-ended and multiple choice formats. Wherever possible, categories were pre-coded to facilitate computer analysis. Many questions and response categories were based upon the previous year's work although new questions were also developed to cover areas not included in this earlier research.

The racial/ethnic distribution of students from each participating school was similar to the actual enrollment of the school. However, the inclusion of an urban, large city school district in the sample resulted in a higher proportion of non-white respondents than is found in the general population of New York State.

The Respondents

The analysis of data from the first survey is based upon 552 respondents (See Chapter III, Table 1). Of these students, 307 (55%) were enrolled in eighth-grade, 245 (45%) in tenth grade. Students from these two grade levels were chosen for study since it is in these grades that decisions are often made affecting educational programs. For instance, during eighth grade students may be involved in tentative planning of their high school programs. Around tenth grade, students may decide whether or not to pursue an occupational education program. These years represent critical choice points where students may make educational decisions related to a future career.

The sample of students ranged in age from 13 to 17 years. It was nearly equally divided between males (52%) and females (48%). Approximately three-fourths of the participants identified themselves as white; the remainder said that they were black (15%), native American (3%), Hispanic (1%), or a member of another racial/ethnic group (6%).

Most of the students (75%) lived with both parents. Among students who reported a different family composition, the greater proportion (19%) lived with their mothers. These background characteristics are summarized in Table 2.

Parental Occupations

Students were asked to report the occupations of their parents. Since parents are the earliest agents of sex-role socialization for the child, they may serve as readily available role-models for traditional or non-traditional occupational choices. In some studies, the employment history of the mother has been found to influence a woman's career orientation.

Two questions asked students to report what type of employment their father (or male guardian) and their mother (or female guardian) usually had. Most of the students responded to these questions. Approximately 89 percent

Table 2
Selected Characteristics of Study Sample (N=552)

Characteristic		% of Study Sample
Sex:	Male	52.0
	Female	48.0
Age:	13 years	18.3
	14	30.7
	15	19.2
	16	22.5
	17 or older	9.3
Racial/Ethnic Group:		
	White	74.7
	Black	15.1
	Native American	3.1
	Hispanic	1.2
	Other	6.0
Family Composition - Student lives with:		
	Both parents	75.3
	Mother only	19.4
	Father only	1.8
	Other	3.5

of the students reported the occupation of their father; 98% reported that of their mother. Students' answers were coded using the major categories of the Dictionary of Occupational Titles (U.S. Department of Labor, 1977). Six additional categories were added to classify survey respondents: deceased, homemaker, disabled, unemployed, retired, and other. The occupational categories of fathers and mothers of all students who responded to these questions are shown in Tables 3 and 4.

As indicated in the tables, the fathers' occupations show diversity in type of employment. The largest single occupational group represented is craft workers. This accounts for slightly over one-fourth (26%) of the occupations reported. Over one-fourth (28%) of the fathers were in the combined area of professional, technical and managerial occupations.

Table 3
Type of Employment of Fathers[a]

Type of Employment	% (N=493)
Professional, technical	16
Managerial	12
Sales	7
Clerical	1
Craft	26
Transport, operatives	12
Service	4
Laborer	2
Farm	5
Type of work not specified	11
Disabled, deceased, unemployed	4
	100%

[a]Includes all students participating in first survey.

Table 4
Type of Employment of Mothers[a]

Type of Employment	% (N=541)
Professional, technical	17
Managerial	4
Sales	3
Clerical, secretarial	13
Craft	2
Transport, operatives	4
Service	11
Farm	-
Homemaker	40
Type of work not specified	4
Disabled, deceased, unemployed	1
	99%[b]

[a]Students participating in first survey.
[b]Does not add to 100% because of rounding.

The largest proportion of students' mothers (40%) are homemakers, who are not employed outside the home. This proportion is similar to the national employment pattern in which over one-half of the mothers of teenage children are employed for pay. Among the employed mothers of the students surveyed, about one in five (21%) is working in a professional, technical and managerial position. However, when this group is broken down by specific occupations, over half of the women are found in the traditional career areas of nursing and health professions (9.1%) or teaching (4.3%). Another large group of students' mothers are employed in secretarial or clerical positions (13.2%) or as service workers (11.0%).

Students' Educational and Career Plans

The students were asked several questions about their educational and career plans and about the techniques helpful in career decision-making. These questions were intended to provide such information as students' anticipated career, their degree of certainty about their choice and sources of career information and assistance. To identify relationships between variables, chi square analyses were performed and statistically significant relationships are noted whenever they occur.

Nearly all (98.5%) of the students anticipate completion of a high school diploma. Over three-fourths (77.2%) of those surveyed also plan to complete some type of postsecondary education with the largest share of these students (40.6%) planning to complete a baccalaureate degree. These plans are presented in Table 5.

The specific occupational choices of the study participants are consistent with this desire for post-secondary education. Three out of five (58%) of the respondents are planning for a professional, technical or managerial level career in the future (see Table 6). A specific occupational choice was named by over two-thirds (71.6%) of all participating students; the remaining 28.4 percent did not cite a career choice.

Table 5
Highest Amount of Education Planned by Students[a]

Amount of Education	% (N=548)
Some high school	1.5
Graduate from high school	21.4
Trade or technical school	7.6
Business school	3.1
Two-year college	18.3
Four-year college	40.6
Graduate or professional school	7.6
	100.0%

[a]Students participating in first survey.

Table 6
Career or Occupation Students Plan to Enter[a]

Career	% (N=404)[b]
Professional, technical	52
Managerial	6
Sales	1
Secretarial, clerical	8
Craft	14
Transport, operatives	2
Service	8
Laborer	-
Farm	3
Military	2
Not specified	3
	99%[c]

[a]Students participating in first survey.
[b]There were 148 students who did not answer this question (27% of total group).
[c]Does not add to 100% because of rounding.

The data indicate that students believe that their career decisions are still subject to change. The participants were asked to select the statement which best described their own situation about choice of a future career. These statements were:

I have made a career or occupational choice.
I have an idea of the general type of career I want.
I am undecided on a career choice.

Only one out of five students (19%) feels that he or she has made a fairly definite choice of a career. The majority of students (53%) had only a general idea about an occupational choice; the remainder (28%) were undecided. No significant differences were obtained by grade or sex of respondent although males were somewhat more likely than females to have made a choice of possible career (see Table 7).

Table 7
Certainty of Career Choice by Sex of Student

Certainty of Choice	Male		Female		Total	
	N	%	N	%	N	%
Made career choice	58	20.9	42	16.1	100	18.6
General idea of career choice	139	50.2	148	56.7	287	53.3
Undecided	80	28.9	71	27.2	151	28.1
Total	277	100.0	261	100.0	538	100.0

Although the anticipated career choices of students included a variety of specific occupations (Table 6), the majority (64%) of these students said that they had not seriously considered a non-traditional career choice. However, there are dramatic differences between males and females in their responses to this question. Over half (61%) of the females surveyed said that they had given serious thought to such a career choice (see Table 8). On the other hand, nearly nine out of ten males (87%) said they had <u>not</u> considered a non-traditional

occupation. It appears that in spite of the willingness of female students to think about non-traditional choices, many of their expressed occupational choices are in traditional female careers. For example, among professional workers, 91 percent of those students who anticipate entering teaching are females, as are 96 percent of those interested in secretarial work and 84 percent of those planning careers in nursing or medical technology.

Table 8
Students Who Have Considered
a Non-Traditional Career by Sex of Student

Non-Traditional Career Choice	Male		Female		Total	
	N	%	N	%	N	%
Considered	36	12.8	159	60.9	195	35.9
Did Not Consider	246	87.2	102	39.1	348	64.1
Total	282	100.0	261	100.0	543	100.0

X^2 significant at .001 level

Sources of Career Information

The students who participated in the study generally felt that they did not have enough information about locally available educational programs to prepare them for a future career. Only 40 percent of students surveyed said that their information was sufficient (Table 9). The remainder of the students either did not have enough information or were not sure if their information was adequate.

Table 9
Students' Perception of Adequacy of Information
About High School or Area Center Programs

Has Enough Information	8th Grade		10th Grade		Total	
	N	%	N	%	N	%
Yes	116	38.3	101	41.6	217	39.7
No	74	24.4	76	31.3	150	27.5
Don't Know	113	37.3	66	27.2	179	32.8
Total	303	100.0	243	100.1	546	100.0

X^2 significant at .05 level

Students were also asked if they had talked with a school counselor about choosing a career. Approximately 60 percent of the respondents reported that they had met with a counselor at least once to discuss occupational choices (Table 10). Tenth grade students were significantly more likely to have engaged in career counseling than were eighth grade students.

Although about 40 percent of those surveyed said that they had never discussed career choice with a counselor, this total may be artificially low. Many schools require students to discuss high school programs and possible future plans with counseling staff. However, students may not have regarded these sessions as career planning sessions and did not include them in their responses.

Table 10
Times Met with School Counselor About Career Choice
By Grade Level of Student

Met with Counselor About Career Choice	8th Grade N	8th Grade %	10th Grade N	10th Grade %	Total N	Total %
Frequently (3 or more times/yr)	44	14.4	32	13.0	76	13.8
Once or Twice a Year	124	40.7	130	52.8	254	46.1
Never	137	44.9	84	34.1	221	40.1
Total	305	100.0	246	100.0	551	100.0

X^2 significant at .01 level

When advice about career decisions is required from others, students plan to seek assistance from their parents or school counselors (Table 11). A number of significant differences were noted between males and females in their opinions about sources of advice. Females were more likely to seek advice from other females, i.e., mothers, female friends and sisters, males were apt to name other males, specifically male friends and brothers, as sources.

Table 11
Sources of Advice on Occupational Decisions
By Sex of Student [1]

Source of Advice	Males (N = 284) N	%	Females (N = 262) N	%	Total (N = 546) N	%
Mother/Stepmother***	194	68.3	218	83.2	412	75.5
School Counselor	198	69.7	179	68.3	377	69.0
Father/Stepfather	200	70.4	170	64.9	370	67.8
Other Relative	137	48.2	131	50.0	268	49.1
Female Friends***	80	28.2	137	52.3	217	39.7
Male Friends*	123	43.3	90	34.4	213	39.0
Teacher	108	38.0	94	35.9	202	37.0
Sister*	75	26.4	92	35.1	167	30.6
Brother*	97	34.2	64	24.4	161	29.5
Other Person	63	22.2	63	24.0	126	23.1
No One	16	5.6	10	3.8	26	4.8

*X^2 significant at .05 level
**X^2 significant at .001 level

Students' opinions were also sought on whether a number of methods for obtaining occupational information would be helpful to them in their career decision-making process. In all but one of the techniques listed, half or more of the respondents thought that the technique would be helpful. Information sent to the home received the highest endorsement by students, followed closely by talking with parents, counselor conferences and printed guidance materials. Eighth grade students were significantly more likely to view talking with their parents as a helpful technique; more tenth grade students felt that visits to school programs and talking with their friends would be a helpful method.

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[1] The materials in each of Tables 11 through 20 and Table 22 represent information that is selected from a number of chi square tables. Each row in these tables represents a separate chi square analysis. For example, in Table 11 each row represents one-half of the dichotomy of whether one would or would not consult that particular person for advice. Row entries are the figures for those who would consult the source in that row.

Table 12
Students' Opinions of the Helpfulness of Methods
of Obtaining Career Information by Grade Level (N = 552)

	Method Perceived Helpful					
	8th		10th		Total	
	N	%	N	%	N	%
Information sent to home	244	79.7	208	84.6	452	81.9
Talking with parents	258	84.3	188	76.4	446	80.8
Conference with counselor	228	77.8	203	82.5	441	79.9
Printed materials from guidance office	231	75.5	203	82.5	434	78.6
Classroom discussions	224	73.2	159	64.6	146	47.7
Visits to school programs	191	62.4	182	74.0	373	67.6**
Talking with friends	158	51.6	154	62.6	312	65.5*
Information on TV	167	54.6	142	57.7	309	56.0
Talking with teachers	173	56.5	120	48.8	293	53.1
Information on radio	130	42.5	107	43.5	237	42.9

*X^2 significant at .05 level
**X^2 significant at .01 level

Table 13
Students' Opinions of the Use of Methods
of Obtaining Career Information by Grade Level (N = 552)

	Method Perceived Helpful					
	8th		10th		Total	
	N	%	N	%	N	%
Information sent to home	74	24.2	78	31.7	152	27.5
Talking with parents	225	73.5	177	72.0	402	72.8
Conference with counselor	137	44.8	126	51.2	263	47.6
Printed materials from guidance office	73	23.9	108	43.9	181	32.8***
Classroom discussions	146	47.7	79	32.1***	225	40.8***
Visits to school programs	50	16.3	71	28.9	121	21.9
Talking with friends	145	47.4	155	63.0	300	54.3***
Information on TV	65	21.2	54	22.0	119	21.6
Talking with teachers	92	30.1	68	27.6	160	29.0
Information on radio	52	17.0	47	19.1	99	17.9

***X^2 significant at .001 level

Students' Occupational Plans

In addition to the information an individual has about occupational choices, many other factors affect a person's decision about a future career. One of these factors is the individual's values about work, that is, what he or she thinks to be important about choosing a job. The students who responded to the survey were asked to name their first, second and third most important reasons from a list of reasons influential in the selection of a career.

Among all the reasons, the respondents said that a future job should offer a good salary. This reason was cited by four out of five students (see Table 14). The second ranked reason was the chance for the person to use his or her particular abilities or skills, a reason chosen by just over one-half (51.5%) of the students.

Table 14
Students' Reasons for Selection of
Future Occupation by Sex of Student (N = 552)

	Proportion Who Ranked Reason First, Second or Third					
	Male		Female		Total	
Reason	N	%	N	%	N	%
Good salary**	242	85.2	191	73.0	433	79.3
Use my abilities and skills	149	52.5	132	50.4	281	51.5
Work with people***	51	18.0	113	43.1	164	30.1
Help other people***	50	17.6	106	40.4	156	28.6
Get ahead, get promotions	86	30.4	63	24.0	149	27.2
Flexible hours or convenient schedule	72	25.4	67	25.6	139	25.4
Make the world a better place	62	21.9	50	19.1	112	20.5
Freedom from supervision	56	19.7	49	18.7	105	19.2
Work with my hands**	64	22.5	29	11.0	93	17.0
Jobs available; steady work	49	17.3	43	16.4	92	16.9
Outdoor work***	61	21.5	19	7.2	80	14.6
Other people think job is important	14	5.0	10	3.9	24	4.4

**X^2 significant at .01 level
***X^2 significant at .001 level

The reasons for choosing an occupation showed marked sex differences along stereotypic lines. Males were significantly more likely to value good salary, the chance to work with one's hands and the ability to work outdoors. Females selected working with people and helping other people as important in their choice. An examination of the reasons according to students' grade levels yielded only one difference: tenth grade students were significantly more likely to value the availability of jobs and steady work as important reasons for their choice.

Program Choices

During secondary school, students may choose from a number of different curricula offered by their institution or by an area vocational center. Students were asked if during 11th or 12th grade they planned to take courses or a program of study to prepare them to enter an occupation. Well over one-half (62.1%) of these students said that they would pursue such a program. There was no significant difference noted between the expressed plans of males and females. However, eighth grade students were significantly more likely to say that they would elect to participate in an occupational program later in high school. Since tenth graders are considerably closer to the time when they would actually take part in the program, their expressions of interest are apt to be more realistic. Thus, they can report if they already have enrolled or expect to enroll in an occupational program.

The students also named the occupational course or program area they would select in high school. Business was the most popular choice, named by over one-quarter (26.1%) of all the students (Table 15). Analysis of the choices by sex of student illustrates that the expression of interest in a program area is strongly sex-stereotyped. All differences between the choices of males and females were highly statistically significant except for students who did not know which program area they would select. No significant differences were noted in students' choices by grade level for the specific occupational program areas. The single exception was for the category "don't know." In this response category, eighth grade students were twice as likely to report that they were uncertain of a program choice - a finding which fits with their age and earlier stage in the decision-making process.

Table 15
Student Interest in Occupational Courses or Programs by Sex of Student (N = 552)

Course or Program Area	Proportion of Students Selecting Area					
	Male		Female		Total	
	N	%	N	%	N	%
Business***	46	16.2	96	36.8	142	26.1
Building Trades***	52	18.3	6	2.3	58	10.6
Mechanics***	58	20.4	4	1.5	62	11.4
Home Economics Occ.***	3	1.1	35	13.4	38	7.0
Technical***	27	9.5	5	1.9	32	5.9
Health Occupations***	2	.7	30	11.5	32	5.9
Agriculture***	23	8.1	4	1.5	27	4.9
Personal Services***	1	.4	17	6.5	18	3.3
Other, Don't Know	48	16.9	38	14.5	86	15.8

***X^2 significant at .001 level

As described previously, few students say they are planning to enter an occupational program which would be non-traditional for their sex. Hence, students were posed a further question to determine what might influence their decision to enter a non-traditional occupational program. The respondents were asked to indicate whether each of the program factors presented would be very important, somewhat important or not important in making their decision. The factors and the students' responses are presented in Table 16.

The table shows that all the options held appeal as a very important factor for some students. However, the two highest ranking choices were selected by nearly three-quarters of the students. Students felt that the occupation should offer both a good salary and good job opportunities in order to affect their decision to choose a non-traditional program area. Although these two factors are subject to conditions in the labor market and are not under the control of an educational institution, this suggests that a school which plans to publicize its program offerings might emphasize the salary rewards and the potential for employment in that occupation. The third and fourth ranked factors, a teacher who would treat students fairly, and a six-week trial period in the programs are conditions which can be modified by a school.

There are a number of significant differences by sex in the factors chosen by students. Females stressed the availability of job opportunities, fairness by teachers and six-week trial period. Males said that having their male friends in the course and at least 20% enrollment of males in the course would be important in deciding to enroll in a non-traditional course. In general, although several of the items did not reach statistical significance, males were more likely than females to select the factors which implied that there would be a support group of peers in the course. These included having male friends and female friends in the course, as well as anywhere from one individual to 20% of the class composed of other males.

Table 16
Importance of Selected Factors in Decision to Enroll
In Non-Traditional Occupational Program by Sex of Student

	Proportion of Students who Rate Factor Very Important					
	Male		Female		Total	
Factors	N	%	N	%	N	%
Earn good money	202	73.2	197	76.4	399	74.7
More job opportunities**	183	67.0	201	77.9	384	72.3
Teacher would be fair**	166	60.1	184	71.3	350	65.5
6-week course trial period*	138	49.8	141	54.2	279	52.0
Students would be friendly	123	44.7	137	52.9	260	48.7
Parents think it is good course	97	34.9	114	43.8	211	39.2
Course offered at home school	88	32.0	97	37.6	185	34.7
Female friends in course	92	33.3	68	26.1	160	29.8
Male friends in course**	96	35.0	56	21.6	152	28.5
At least one student of your sex in course	80	28.9	56	21.5	136	25.3
Guidance counselor thinks it a good course	64	23.2	67	25.8	131	24.4
One year program of study	59	21.4	49	19.1	108	20.3
At least 20% of students in course of one's sex***	53	19.3	25	9.6	78	14.6
Female friends think it a good course	40	14.4	45	17.2	85	15.8
Male friends think it a good course	45	16.3	37	14.1	82	15.2

*X^2 significant at .05 level
**X^2 significant at .01 level
***X^2 significant at .001 level

Students were also asked how others might feel if the individual decided to enter an occupation which is non-traditional for his or her sex. The possible answers were:

Would encourage me
Would neither encourage nor discourage me
Would discourage me
I don't know
Does not apply

The analysis was performed for students for whom the question was applicable; i.e., students who responded "does not apply" were eliminated from the analysis. Table 17 summarizes the results concerning which persons would provide encouragement to the student in entering a non-traditional occupation.

When all the sources of support are considered, females report higher levels of support for their decisions than males. These differences are statistically significant at the .001 level for six of the eight support sources listed. Male friends and brothers were viewed as least supportive of non-traditional choices. Among both males and females, they were perceived as the strongest sources of discouragement for such a choice. For example, 29 percent of the respondents thought their brother(s) would discourage them; 37 percent thought that their male friends would actively discourage their choice (Table 18). Among all sources, male students were more likely to report perceptions of discouragement for choice of a non-traditional occupation from others. For students in different grade levels, only two significant differences were observed. Eighth grade students were more likely to perceive fathers as a source of encouragement (40.2% vs 34.1%); tenth graders were more likely to view their male friends as encouraging (15.0% vs 8.5%) or neutral (21.1% vs 15.4%) towards a non-traditional career.

Table 17
Perceived Encouragement for Decision to Enter
Non-Traditional Occupation by Sex of Student

	Proportion Who Would Encourage Student						
	Male		Female		Total		Total
Source	N	%	N	%	N	%	N[a]
Mother/Female Guardian***	102	38.4	156	60.5	258	49.3	523
School Counselor	116	43.6	118	47.2	234	45.3	516
Female Friends***	72	27.5	148	57.8	220	42.5	518
Father/Male Guardian***	79	30.6	127	51.2	206	40.7	506
Sister(s)***	62	28.8	106	51.7	168	40.0	420
Teacher(s)	80	31.0	83	33.5	163	32.2	506
Brother(s)***	37	16.9	60	29.7	97	23.0	421
Male Friends***	24	8.9	38	15.0	62	11.9	523

***X^2 significant at .001 level
[a]Based on students in first survey for whom question is applicable.

Table 18
Sources of Discouragement for Decision to Enter
Non-Traditional Occupation by Sex of Student

	Proportion Who Would Discourage Student						
	Male		Female		Total		Total
Source	N	%	N	%	N	%	N
Male Friends	131	48.7	62	24.4	193	36.9	523
Brother(s)	83	37.9	39	19.3	122	29.0	421
Father/Male Guardian	47	18.2	21	8.5	68	13.4	506
Sister(s)	32	14.9	11	5.4	43	10.2	420
Female Friends	29	11.1	17	6.6	46	8.9	518
Mother/Female Guardian	13	4.9	10	3.9	23	4.4	523
School Counselor	7	2.6	9	3.6	16	3.1	516
Teacher(s)	9	3.5	3	1.2	12	2.4	506

Students' Attitudes Toward Non-Traditional Occupations

The students were asked to indicate their personal opinions about males and females in various occupations. A list of 30 different occupations was presented, including occupations traditional for males, those traditional for females, and mixed occupations where male and female participation is more nearly equal. The respondents were provided with three options: that the job should be held by males, females or by both sexes.

The list of thirty occupations produced responses ranging from 41 to 97 percent agreement by students on whether both sexes should hold the job (Table 19). The highest levels of agreement were for the occupations of guidance counselor, store salesclerk, real estate agent, computer programmer and data processor. These occupations were rated as appropriate for males and females by over 90 percent of the students. Further, this opinion was shared by both male and female respondents.

Among the remaining 25 occupations from the list, 20 of them showed statistically significant differences by sex of student. Generally, more female students tended to believe that occupations were appropriate for both sexes. The sole exception to this trend was for the occupation of drafter where 85.7 percent of the male students and 76.5 percent of the female students thought that both sexes should be employed.

The occupations which show the lowest agreement on participation by both sexes were construction worker, welder, machine and metal worker and automobile mechanic. For these four occupations, more than one-half the students felt that the job is appropriate for the sex (male) traditionally associated with that occupation.

The students' responses on this question reflect the sex-stereotyping which now prevails in these occupations. That is, for occupations which already have a relatively equal balance of the sexes, more students are likely to respond that both sexes should hold the job; for occupations with a high degree of sex-stereotyping, students are more likely to favor the response that says the job should be held by the traditional sex. This finding suggests the amount of

resistance to change which may exist among students especially towards participation in those occupations in the latter part of the list. In particular, male students appear to be more stereotyped in their attitudes towards equal participation in the various occupations. Such stereotypic attitudes are a source of concern for vocational educators who hope to improve participation by the non-traditional sex in occupational education classes.

Table 19

Proportion of Students Who Think Both Male & Females Should Hold Occupation

Occupation	Male		Female		Total	
	N	%	N	%	N	%
Guidance Counselor	265	96.4	253	97.7	518	97.0
Store Salesclerk	259	94.5	250	96.5	509	95.5
Real Estate Agent	254	92.4	248	95.8	502	94.0
Computer Programmer	249	90.5	245	94.2	494	92.3
Data Processor	249	91.2	238	91.9	487	91.5
Restaurant Manager***	227	83.2	243	93.1	470	88.0
Elementary School Teacher	231	88.5	231	84.6	462	86.5
Veterinarian	233	85.7	223	86.1	456	85.9
Food Service Worker***	217	79.2	235	90.4	452	84.6
Police Officer***	204	74.2	233	89.6	437	81.7
Drafter/Draftsperson**	233	85.7	195	76.5	428	81.2
School Principal**	201	73.4	220	85.3	421	79.1
Dental Assistant***	160	58.2	216	83.1	376	70.3
Florist***	159	57.8	201	77.6	360	67.4
Librarian*	162	58.9	178	68.5	340	63.6
Truck Driver***	148	54.2	188	72.6	336	63.2
Flight Attendant*	156	57.4	176	67.7	332	62.4
Electrician	158	57.7	167	64.5	325	61.0
Farmer**	144	52.6	171	66.8	315	59.4
Air Conditioning Mechanic	151	59.2	154	55.3	305	57.2
Plumber	143	51.8	157	60.4	300	56.0
Cosmetologist***	134	48.7	164	63.8	298	52.6
Nurse***	123	44.9	159	61.6	282	53.0
Child Care Aide**	128	46.9	153	58.6	281	52.6
Licensed Practical Nurse***	118	43.1	161	62.2	279	52.3
Secretary*	126	45.8	143	55.2	269	50.4
Automobile Mechanic***	111	40.7	150	58.6	261	49.3
Machine & Metal Worker*	115	42.0	131	51.0	246	46.3
Welder*	108	39.3	130	50.4	238	44.7
Construction Worker***	84	30.7	136	52.1	220	41.1

*X^2 significant at the .05 level
**X^2 significant at the .01 level
***X^2 significant at the .001 level

Parents' Opinions on Career Decisions

The parents of students in schools where classroom activities were conducted responded to questions on a special survey interview about factors important in making career decisions. A total of 127 parents out of the 276 students in the experimental group returned their surveys - a response rate of 46 percent of the parents. Since in the previous phase of the project parents were identified as an important influence on their children's career decisions, a deliberate attempt was made to provide a reason for students and parents to discuss careers and career decisions together.

The survey interview was completed by 48 male and 74 female adults, nearly one-half the parents of students in the experimental group. Five adults did not report their sex. Seventy-two adults (56.7%) were interviewed by an eighth grade student; 55 (43.3%) were interviewed by a tenth grader. The majority of these adults (83.5%) said they were either currently employed or had been employed within the past few years. The occupations reported by these individuals were similar to those of the parents in the total student sample (see Tables 3 and 4).

The parents who are currently employed outside the home were asked what they liked about their own job. The same list of characteristics important in the selection of an occupation which appeared in the student survey was presented to these students' parents. The major difference was that where students were asked to indicate their three most important reasons for selection of an occupation, parents could indicate any or all reasons which they felt were positive factors in their job. The responses of these adults are presented in Table 20.

The characteristics which working parents liked best about their jobs were the chance to work with people (75.2%) and the chance to use their own abilities and skills (74.3%). These two factors were both chosen by approximately three-quarters of the parents.

Table 20
Working Adults' Opinion About Characteristics
They Like in Their Own Jobs

Characteristic	Males (N = 44) N	%	Females (N = 57) N	%	Total (N = 101) N	%
Good salary***	35	79.5	19	33.3	54	53.5
Work with people*	28	63.6	48	84.2	76	75.2
Get ahead; get promotions*	18	40.9	11	19.3	29	28.4
Jobs available; steady work	18	40.9	14	24.6	32	31.7
Outdoor work***	14	31.8	2	3.5	16	15.8
Work with my hands	21	47.7	19	33.3	40	39.6
Other people think job is important	21	47.7	18	31.6	39	38.6
Use my particular abilities & skills	33	75.0	42	73.7	75	74.3
Help other people	22	50.0	33	57.9	55	54.5
Freedom from supervision	24	54.5	28	49.1	52	51.5
Make the world a better place	18	40.9	18	31.6	36	35.6
Flexible hours or convenient schedule	19	43.2	30	52.6	49	48.5

*X^2 significant at the .05 level
***X^2 significant at the .001 level

Several of these items show statistically significant differences when the responses of working men and women are examined. "Good salary," named by four out of five men, ranked first among the characteristics men liked about their jobs. This same factor was mentioned by only one-third of the adult women. In addition, men and women differed on whether the chance to work with people, the chance to advance in their job and working outdoors were positive aspects of their jobs. More men thought that the chance for advancement and outdoor work were positive factors; more women said that working with people was a positive characteristic in their work.

The parents interviewed were asked which job they would select if they were choosing a job today. Four out of five (80.2%) of the adults who are currently working outside the home and who listed their occupation named a different occupation than the one in which they are employed. Most adults named occupations which were either at a higher level in the same general occupational field (e.g., a licensed practical nurse would become a registered nurse) or in an area that has shown recent growth (e.g., computer-related occupations).

Would parents advise a young man or woman to enter their present occupation? In spite of the large number of working adults who say that they would enter another occupation today, an average two out of three individuals would approve the choice of their own occupation for a teenager. Table 21 illustrates that both adult males and females showed more approval of this decision for a student of the same sex as the adult. However, the difference in the advice given by adult males and females was statistically significant only for girls. Over three-quarters (77.8%) of the women felt that they would recommend that a female student select their present occupation; only slightly over one-half (54.8%) of adult men would make this same recommendation for young women.

Table 21
Working Adults' Advice to Students
About Entering Their Own Occupation

Adults' Occupation	Advice to Girl by: Male (N = 42) N	%	Female (N = 54) N	%	Advice to Boy by: Male (N = 44) N	%	Female (N = 55) N	%
Enter	23	54.8	42	77.8	35	79.5	34	61.8
Do Not Enter	19	45.2	12	22.2	9	20.5	21	38.2

Advice to Students

All parents, whether working outside the home or not, were asked their opinions about the characteristics a young person should consider in choosing an occupation. The parents responded to the question twice, first considering the characteristics as important for a girl, then for a boy. The parents' responses are summarized in Table 22.

The adults who responded to the interview thought that a good salary and the chance to use one's abilities and skills were important for both males and females in selecting an occupation. Both of these characteristics were named by over 90 percent of the adults. The chance to get ahead in the job or to get promotions ranked third in importance. This emphasis on salary and advancement in the selection of an occupation may reflect personal economic concerns of adults resulting from inflation and current labor market conditions.

In most instances, adult men and women gave approximately the same advice to young men and women. However, adults thought that it is less important for a girl to consider outdoor work in the selection of a job than it is for a boy. About one-third (32.8%) of adults said that this characteristic should be considered by girls; over one-half (58.2%) said it should be considered by boys.

Male and female adults differed from each other in their advice to girls on two characteristics from the list. Women were more likely to say that the chance to work with people and the chance to help other people should be considered as important by girls more than boys. There were no statistically significant differences between men and women in the importance of each factor for boys.

Table 22
Parents' Advice to Students About Characteristics Important in a Job (N = 122)

	Advice to Girl by:				Advice to Boy by:			
	Male		Female		Male		Female	
Characteristics	N	%	N	%	N	%	N	%
Good salary	45	93.8	67	90.5	44	91.7	70	94.6
Work with people	33	68.8	64	86.5*	35	72.9	58	78.4
Get ahead; get promotions	42	87.5	60	81.1	43	89.6	66	89.2
Jobs available; steady work	36	75.0	52	70.3	37	77.1	56	75.7
Outdoor work	18	37.5	22	29.7	30	62.5	41	55.4
Work with my hands	26	54.2	40	54.1	35	72.9	48	64.9
Other people think job is important	22	45.8	24	32.4	21	43.8	27	31.5
Use my particular abilities & skills	46	95.8	67	90.5	47	97.9	69	93.2
Help other people	31	64.6	63	85.1*	35	72.9	60	81.1
Freedom from supervision	28	58.3	50	67.6	40	83.3	50	67.6
Make the world a better place	32	66.7	58	78.4	37	77.1	65	87.8
Flexible hours or convenient schedule	35	72.9	51	68.9	37	77.1	52	70.3

*X^2 significant at the .05 level.

V

RESULTS: ANALYSIS OF EXPERIMENTAL EFFORT

An important task in this study was to determine change over time in students' attitudes toward careers and specifically toward occupations non-traditional for their sex. As described in Chapter III, the students from the eight participating schools composed experimental and control groups for the purpose of determining the effectiveness of classroom activities to promote less stereotypic attitudes towards occupational choice. Thus, to determine if any change had taken place among students who had participated in the classroom activities, a pre-test was administered in late April of 1981, followed by a post-test about a month later.

This process resulted in a total of 460 students who participated in both surveys. This total was made up of 231 students from 8th grade classes and 229 from tenth grade classes; 237 males and 218 females (Table 23). Since in seven of the eight schools students who missed the second survey were apparently absent for a variety of reasons, any absence was assumed to be on a random basis. However, an exception was the school in which eighth grade students were not able to participate in the second survey because of time restrictions. Therefore, the composition of the sample of students who took both surveys includes fewer eighth graders than the number in the first survey.

The questions on the second survey were identical to those on the pre-test except that the questions on the students' personal histories were omitted on the follow-up version. Since the surveys were pre-coded with a student identification number, this permitted the background information to be deleted making the administration time of the instrument considerably shorter.

Table 23
Characteristics of Students in
Experimental and Control Groups

Characteristic		Control (N=213) N	Control (N=213) %	Experimental (N=247) N	Experimental (N=247) %
Sex:	Male	104	48.8	133	53.8
	Female	108	50.7	110	44.5
	Unknown	1	.5	4	1.6
Grade:	8th	94	44.1	137	55.5
	10th	119	55.9	110	44.5
Racial/Ethnic Group:					
	White	169	79.3	147	59.5
	Black	20	9.4	51	20.6
	Other	14	6.6	30	12.1
	Unknown	10	4.7	19	7.7

The basic method for analyzing the responses from the two instruments was a comparison of responses of experimental and control groups on a series of t-tests. There were four comparisons made:

1. Comparison of responses on the first survey to determine any significant differences between experimental and control groups before the study (Group Comparison).
2. Comparison of responses on the second survey to determine differences, one month later, between the experimental and control groups (Group Comparison).
3. Comparison of responses of students in the experimental group on the first and the second survey (Paired Samples).
4. Comparison of responses of students in the control group on the first survey and the second survey (Paired Samples).

The analysis of responses on the first survey indicated several significant differences between males and females. Thus, separate analyses were also performed for the responses of males and females in experimental or control groups to control for the sex of the student.

Methods of Obtaining Career Information. Ten methods for obtaining career information were listed and students were asked to indicate those: 1) they thought would be helpful to them and 2) those they had actually used. The methods that were considered most helpful at the time of the first survey by the 460 students in the experimental and control schools who took both surveys rank the same as those reported by all students in Table 12.

There were only two methods where there was a significant difference between the responses of males and females about whether a method would be helpful. More females than males preferred to have information sent to the home (t-test significant at .05 level) and wished to talk with friends (t-test significant at .01 level).

Students in the experimental and control groups were very similar in their opinions. On the first survey, the only difference noted was that students in the control group were more likely to say that materials available from the guidance office would be helpful to them (t-test significant at .05 level). There were no differences between the two groups in their responses to the second survey and neither group changed their opinions significantly from the first to the second survey. The preference for methods helpful in choosing a career do not appear to be related to a student being in the experimental or control group. The top ranked methods for obtaining career information appeal to all the students: over four-fifths of the students said that they wanted materials sent to them and their parents at home, to talk with parents, and to have conferences with a counselor.

Students also reported the methods they had actually used to obtain information to prepare for a career. Fewer responses were received to this question than to the question on the helpfulness of methods. That is, more students said that they thought a method would be helpful than had actually used the method. The methods actually used by the students who took both surveys were the same as those reported by all students in Table 13.

The method used most frequently, "talking with my parents", was mentioned by almost three-quarters of the students. However, the method that more students thought would be helpful than any other, "information sent to students and their parents at home," was actually used by only 28.7% of the students. In comparisons between the males and females in the sample, the only statistically significant difference obtained was that females were more likely to report that they used talking with their friends as a method of obtaining information. The comparisons of experimental and control groups also yielded few differences. Students in the experimental group were significantly more likely to have used the radio to obtain information; students in the control group were more likely to have talked with friends.

In a t-test utilizing paired comparisons, there was no significant change over time in the students in the experimental schools on any of the items. In the control group only one item showed a significant change between the two survey administrations. The students in the control group were more likely to say they had talked with their friends about their career decisions. The only differences between groups in the experimental and control schools at the time of the second survey was that controls were more likely to have had conferences with a counselor and talked with their parents. Since there are so few differences between these groups and between the sexes, all students appear to prefer similar methods to find out about careers. However, many students have not used the methods that they think would be helpful, especially information sent to the students and parents at home and printed information available from the guidance office.

Sources of Advice on Occupations. Students were given a list of various persons and asked which they would ask for advice to help decide on an occupation. The list included relatives, friends and school personnel. Differences between the sexes on the first survey indicated that females are more likely than males to seek advice from other females, namely mother, female friends and sister. Males were significantly more likely than females to seek advice from a brother. (See Table 11).

These differences between males and females suggest the influence that same sex role - models and support persons may have on an individual's career choice. However, it may be of educational interest to note that no significant differences were found between the sexes in their likelihood to seek advice from a counselor or teacher. Both males and females were equally likely to use these persons as sources of advice with counselors ranking second in popularity as advisors. Since the sex of the respondent's counselor or teacher(s) is unknown, it is impossible to determine if gender had an effect upon the person's response.

T-tests were performed to determine differences between male and female students in the experimental and control groups concerning whom they would ask for advice. (See Table 24). Students in both groups showed change over time in the direction of being more likely to seek advice from others. It is possible that the experience of completing the survey instrument made these students more aware of these issues and more likely to discuss them.

Table 24 shows that male students in the control group changed significantly in their likelihood to seek advice from their mothers, fathers, brothers, sisters, teachers, and others. Males in the experimental group showed a similar change over time in the direction of being more likely to seek advice from male friends, female friends, and sisters.

Comparisons of the mean scores of the experimental and control groups on the first and the second surveys were also conducted. The results of t-tests showed that in only one category on each survey was there a significant difference between males in the experimental and control groups. (Table 25). Therefore, since there were few differences between the groups and since males within each group showed change in their likelihood to seek advice from particular persons, the males in <u>both</u> groups became more likely to seek advice from others.

Table 24

Sources of Occupational Advice for Students: Comparison of Change in Students' Responses Between First and Second Surveys for Experimental and Control Groups

Source of Advice	Time of Survey	Comparison of Mean Values on First and Second Surveys: Experimental Group-Means Males (N = 133)	Experimental Group-Means Females (N = 110)	Control Group-Means Males (N = 104)	Control Group-Means Females (N = 108)
Mother or stepmother	1st	1.71	1.84	1.67	1.82
	2nd	1.75	1.80	1.80***	1.89
School counselor	1st	1.73	1.69	1.67	1.74
	2nd	1.77	1.75	1.77	1.78
Father or stepfather	1st	1.71	1.65	1.73	1.64
	2nd	1.72	1.69	1.84**	1.69
Other relative	1st	1.50	1.41	1.47	1.58
	2nd	1.58	1.51*	1.56	1.69*
Female friends	1st	1.26	1.46	1.32	1.63
	2nd	1.39**	1.65**	1.46**	1.71*
Male friends	1st	1.38	1.32	1.54	1.42
	2nd	1.53***	1.45	1.64	1.57***
Teacher	1st	1.42	1.34	1.32	1.42
	2nd	1.43	1.52***	1.47**	1.51
Sister	1st	1.29	1.28	1.23	1.45
	2nd	1.36*	1.43***	1.33*	1.53
Brother	1st	1.36	1.20	1.22	1.31
	2nd	1.43	1.34**	1.50***	1.37
Other person	1st	1.22	1.18	1.23	1.32
	2nd	1.27	1.33***	1.38**	1.36
No One	1st	1.05	1.05	1.08	1.03
	2nd	1.07	1.06	1.07	1.01

T-test of paired samples significant at

*$p < .05$
**$p < .01$
***$p < .001$

Code for computing means:
2 Would ask for advice
1 Would not ask or no answer

Table 25

Sources of Occupational Advice for Students: Comparison of Responses of Experimental and Control Groups at First Survey and at Second Survey

Source of Advice	Group	Mean Values of Control and Experimental Groups: Males in Control and Exp. Gr. (N = 104/133) First Survey	Males in Control and Exp. Gr. (N = 104/133) Second Survey	Females in Control and Exp. Gr. (N = 108/110) First Survey	Females in Control and Exp. Gr. (N = 108/110) Second Survey
Mother or stepmother	Con.	1.66	1.80	1.82	1.89
	Exp.	1.71	1.75	1.84	1.80
School counselor	Con.	1.67	1.77	1.74	1.78
	Exp.	1.73	1.77	1.69	1.75
Father or stepfather	Con.	1.73	1.84*	1.64	1.69
	Exp.	1.71	1.72	1.65	1.69
Other relative	Con.	1.47	1.56	1.58***	1.69**
	Exp.	1.50	1.58	1.41	1.51
Female friends	Con.	1.32	1.46	1.63*	1.71
	Exp.	1.26	1.39	1.46	1.65
Male friends	Con.	1.54*	1.64	1.42	1.57
	Exp.	1.38	1.53	1.32	1.45
Teacher	Con.	1.32	1.47	1.42	1.51
	Exp.	1.42	1.43	1.34	1.52
Sister	Con.	1.23	1.33	1.45**	1.53
	Exp.	1.29	1.36	1.28	1.43
Brother	Con.	1.33	1.50	1.31	1.37
	Exp.	1.36	1.43	1.20	1.34
Other person	Con.	1.23	1.38	1.32*	1.36
	Exp.	1.22	1.27	1.18	1.33
No one	Con.	1.08	1.07	1.03	1.02
	Exp.	1.05	1.08	1.05	1.06

T-test of groups significant at
*p <.05
**p <.01
***p <.001

Code for Computing Means:
2 Would ask for advice
1 Would not ask or no response

Female students in both the experimental and control groups also changed over time in seeking advice from a wider variety of persons. Females in the experimental schools showed an increase in their likelihood to seek advice from other relatives, female friends, male friends, mother, sister, father, and other persons (Table 24). Females in the control schools showed an increase in likelihood to consult other relatives, female friends, and male friends. Although at the first survey the female students in the control group were more likely than the experimental females to consult a wider variety of persons, by the second survey the two groups had become more similar. The only significant difference between the two groups of female students was that females in the control group remained more likely to seek advice from relatives other than parents or siblings.

For both sexes, the categories where change occurred were those where there were fewer responses on the initial survey and consequently, more room for growth. Those individuals from whom students would frequently seek advice (e.g., mother, father, counselor) showed little significant change over time. In brief, by the time of the post-test, males and females in both the experimental and control schools appear to be more willing to seek advice about occupations from a greater variety of persons with increases occurring in those categories where there is more room for change to take place. This finding suggests that the survey itself may be a productive method for stimulating discussion between students and others about plans for a future occupation.

Reasons for Choice of Future Occupation. Students were presented with a list of twelve possible reasons for choice of a future occupation and each student was asked to rank the three reasons that would be most important to him or her. This question was included in identical format on both the first and second survey. The responses on the first survey were reported previously (See Table 14). In summary, the reasons cited most frequently by females were: good salary, use my abilities and skills, work with people, and help other people. Those cited most frequently by males were: good salary, use my abilities and skills, get promotions, and flexible hours.

On the pre-test, male and female responses differed significantly on some of the items to be considered in selecting an occupation. T-tests showed that females were more likely than males to select two items that are associated with female stereotypes, namely: a chance to work with people and a chance to help other people. Males were significantly more likely to mention good salary, outdoor work and chance to work with my hands as important reasons for choosing an occupation. Because of these initial differences, responses from males and females were analyzed separately.

Analysis of the responses from female students showed there were no significant differences between females in the experimental group and females in the control group at the time of the first survey. However, several significant changes took place among the females in the experimental group from the first to the second survey.

In the experimental group females increased significantly in their preferences for good salaries and flexible hours and showed decreases in the frequency of their selection of the reasons which involved working with people, helping other people, and helping to make the world a better place to live. Because this section required ranking, an increase in the frequency of choice of some items would mean a corresponding decrease for others. However, it appears that females in the experimental group may have been influenced by classroom activities and discussions about choosing a career. The direction of the change displayed by the females was toward those items emphasized by their male peers and parents, i.e. salaries and benefits, and away from those factors which have been traditionally associated with their sex. In contrast, the female students in the control group showed little change between the pre-test and the post-test. The only significant change was a decrease in the number of students who named "a chance to use my particular abilities and skills" as a reason for selecting an occupation (see Table 26).

This observation was confirmed in the comparisons of the responses of the experimental and control groups on the post-test. Females in the experimental group differed significantly from those in the control group on three items. Females in the experimental group were significantly more likely to state that

good salary and flexible hours were important to them. Students in the control group were more likely to say that a chance to help other people was an important reason (Table 27).

For males, the same general pattern observed in the responses of the female students held true. That is, male students in the experimental group changed significantly on six of the twelve characteristics between the pre-test and the post-test. Increases were noted in the following job characteristics: good salary, chance to get promotions, freedom from supervision, and flexible hours. Significant decreases occurred among males who selected as reasons "the chance to use my abilities and skills" and "helping to make the world a better place to live." Among males in the control group, there were no significant changes on any item between the first and second administrations of the instrument (Table 26).

In the comparisons of the experimental and control groups, the groups differed on two items at the time of the first testing. Experimental group males were significantly more likely to feel that a good salary is important in selecting an occupation; control group males were more likely to prefer freedom from supervision. On the post-test, experimental group males showed significant differences in their selection of good salary and chance to obtain promotions as reasons; males in the control group significantly indicated a preference for choosing an occupation in order to help make the world a better place to live (Table 27).

The analyses of responses to this question about characteristics important in the selection of a job indicates that individuals in the experimental group, whether male or female, showed significant changes in their responses on the pre and post-tests. Since males and females in the control group remained nearly the same except for a single change on the part of control group females, it is possible that the activities conducted in the classrooms with the experimental group were related to their change in attitude.

Table 26
Reasons for Choice of Future Occupation: Comparison of Change in Students' Responses Between First and Second Surveys for Experimental and Control Groups

Reasons Ranked as Most Important	Time of Survey	Comparison of Mean Values on First and Second Surveys: Experimental Group-Means Males (N = 133)	Experimental Group-Means Females (N = 110)	Control Group-Means Males (N = 104)	Control Group-Means Females (N = 108)
Good salary	1st	10.57	9.69	9.82	9.44
	2nd	11.14**	10.60***	9.98	9.47
Use my abilities and skills	1st	8.23	7.47	8.15	8.16
	2nd	7.59*	7.66	8.26	7.31**
Work with people	1st	6.10	7.70	5.83	7.57
	2nd	5.71	6.81**	5.88	7.46
Help other people	1st	5.89	6.89	5.87	7.60
	2nd	5.73	6.24*	5.99	7.62
Get ahead, get promotions	1st	6.86	6.35	6.44	6.42
	2nd	7.54**	6.40	6.50	6.23
Flexible hours, convenient working schedule	1st	6.35	6.54	6.61	6.21
	2nd	6.92	7.25	6.30	6.30
Make the world a better place	1st	6.10	6.12	6.17	5.78
	2nd	5.35**	5.65*	6.01	5.89
Freedom from supervision	1st	5.70	6.03	6.46	6.04
	2nd	6.14*	5.80	6.25	6.09
Work with my hands	1st	6.06	5.71	6.55	5.63
	2nd	6.10	5.57	6.22	5.43
Jobs available, steady work	1st	6.02	6.09	6.04	6.08
	2nd	6.20	5.94	5.99	6.02
Outdoor work	1st	6.01	5.50	6.52	5.42
	2nd	5.88	5.47	6.08	5.66
Other people think job is important	1st	5.24	5.09	5.29	5.26
	2nd	5.23	5.05	5.19	5.10

T-test of paired samples significant at
*$p < .05$
**$p < .01$
***$p < .001$

Code for computing means:
12 Most important reason
11 Second most important reason
10 Third most important reason
5 Not important, not ranked

Table 27
Reasons for Choice of Future Occupation: Comparison of Responses of Experimental and Control Groups at First Survey and at Second Survey

Reasons Ranked as Most Important	Group	Mean Values of Control and Experimental Groups: Males in Control and Exp. Gr. (N = 104/133) First Survey	Males in Control and Exp. Gr. (N = 104/133) Second Survey	Females in Control and Exp. Gr. (N = 108/110) First Survey	Females in Control and Exp. Gr. (N = 108/110) Second Survey
Good salary	Con.	9.82	9.98	9.44	9.47
	Exp.	10.57*	11.14***	9.69	10.60***
Use my abilities and skills	Con.	8.15	8.26	8.16	7.31
	Exp.	8.23	7.39	7.47	7.66
Work with people	Con.	5.83	5.88	7.57	7.46
	Exp.	6.10	5.71	7.70	6.81
Help other people	Con.	5.87	5.99	7.60	7.62
	Exp.	5.89	5.73	6.89	6.24
Get ahead, get promotions	Con.	6.44	6.50	6.42	6.23
	Exp.	6.86	7.54**	6.35	6.40
Flexible hours, convenient working schedule	Con.	6.61	6.30	6.21	6.30
	Exp.	6.35	6.92	6.54	7.25**
Make the world a better place	Con.	6.17	6.01	5.78	5.89
	Exp.	6.10	5.35**	6.12	5.65
Freedom from supervision	Con.	6.46	6.25	6.04	6.09
	Exp.	5.70*	6.14	6.03	5.80
Work with my hands	Con.	6.55	6.22	5.63	5.43
	Exp.	6.06	6.10	5.71	5.57
Jobs available steady work	Con.	6.04	5.99	6.08	6.02
	Exp.	6.02	6.20	6.09	5.94
Outdoor work	Con.	5.92	6.08	5.42	5.66
	Exp.	6.01	5.88	5.50	5.47
Other people think job is important	Con.	5.29	5.19	5.26	5.10
	Exp.	5.24	5.23	5.09	5.05

T-test of groups significant at
*p<.05
**p<.01
***p<.001

Code for computing means:
12 Most important reason
11 Second most important reason
10 Third most important reason
5 Not important, not ranked

Consideration of Career Choice

Both the pre and post-test instruments included several questions concerning: the extent to which the student had made a career or occupational choice, whether the student had sufficient information about programs to prepare for a future career, and whether the student had thought seriously about entering an occupation that is not traditional for his or her sex. T-tests were performed for the responses of students who took both surveys. On the pre-test, a comparison of the responses of male and female students showed no difference between the sexes in the extent to which the student had made a career or occupational choice. However, females in the experimental group showed significant change from the first to the second survey in becoming more likely to have made a choice. Neither males nor females in the control group changed. Therefore, although males and females at this age level are similar in the extent to which they have made a career choice, it appears that the experiences of the experimental group may be related to females becoming more likely to cite an occupational choice.

Although males were more likely to have information about programs to prepare for a career (t-test significant at the .05 level) at the time of the pre-test, there was no significant difference between the sexes in information about programs on the post-test. No significant differences were obtained between males in the experimental and control groups on either the first survey or the second survey, and neither group showed a change over time in the amount of information. Females in the control group were more likely to say they had sufficient information at the time of the first survey, but there was no difference at the second survey and there was no change between surveys among either group. Since the experiences in the experimental group did not include specific information on programs available, it is expected that there would be no difference between experimental and control students attributable to the study.

A central purpose of the study, however, was to have students receive occupational information and to participate in discussions of non-traditional careers. The pre-test showed that females were more likely than males to have thought seriously about entering an occupation that would be non-traditional for their sex. Therefore, separate analyses were performed for males and females. When comparing students in the experimental and control schools, the greatest change occurred for males in the experimental group. These males showed a significant increase (t-test significant at the .01 level) in consideration of a non-traditional occupation. There was no change in the attitudes of males in the control groups. On the first survey there were no significant differences between the experimental and control groups in likelihood of consideration of a non-traditional occupation. By the second administration of the instrument, the experimental group males were significantly more likely to consider a non-traditional occupation. In the experimental group, 13.6% of the males had considered a non-traditional occupation at the time of the first survey. This total almost doubled, increasing to 24.6% by the second survey. Among males in the control group, 12.6% considered a non-traditional occupation at the first survey and 11.7% at the second survey.

Many more females than males had considered a non-traditional occupation at the first survey. This included 62.0% of females in the control group and 60.6% of females in the experimental group. These differences between groups were not significant. Neither group of females changed significantly, and there were no differences between the two groups of females at the second survey. Although it is possible that the activities in this study influenced males in consideration of a non-traditional career, they appear to have no influence on consideration of a non-traditional career by females. A possible explanation is that at these 8th and 10th grade levels approximately three-fifths of the females have already considered a non-traditional career. Consequently, the females in the study were already well-informed about non-traditional careers and had little room to show an increase in numbers. However, these grade levels appear to be a very opportune time for providing males with opportunities to consider a wider range of non-traditional job opportunities.

Perception of Encouragement for Entering a Non-Traditional Occupation

Students were given a list including family members, friends, counselor, and teacher and asked the degree of encouragement or discouragement for entering a non-traditional occupation that they would expect from each of these people. Females perceived more encouragement than males from family and friends but both sexes perceived an equal amount of support from counselor and teachers. (See Table 17). Results from a chi square test indicated: 1) that females perceived more support than males for entering a non-traditional occupation from mother, father, brother, sister, male friends and female friends; (chi square significant at .001 level) and 2) no difference in perception between males and females for support from counselor and teacher.

There were no significant differences between female students in the experimental and control schools on any item in perception of support on either the first survey or the second survey. Both groups of females were similar in perception in each survey. However, female students in both the experimental and the control groups increased significantly in their perception of support from their mothers or female guardian (t-test with paired comparison). Since female students in both groups indicated increased perception of support from their mothers, there were still no differences in perception of support between experimental and control groups at the second survey.

For male students there were no differences in perception of support between those in the experimental and the control groups at the first survey. At the second survey males in the experimental group were more likely than males in the control group to perceive support from male friends. In a t-test with a paired comparison, males in the experimental group showed no change from the first to the second survey. Males in the control group showed an increase in perception of support at the second survey from mother, counselor, and father. There does not appear to be a relationship between any of the experiences in the experimental group and any increase in perception of support for entering a non-traditional occupation for males or females. The sole exception was an increase in perception of encouragement from male friends by males in the experimental group.

Table 28

Perceived Encouragement for Decision to Enter a Non-Traditional Occupation: Comparison of Change in Students' Responses Between First and Second Surveys for Experimental and Control Groups

Source	Time of Survey	Comparison of Mean Values on First and Second Surveys: Experimental Group-Means Males (N = 133)	Experimental Group-Means Females (N = 110)	Control Group-Means Males (N = 104)	Control Group-Means Females (N = 108)
Mother/female guardian	1st	2.37	2.58	2.30	2.51
	2nd	2.39	2.73**	2.44*	2.63*
School counselor	1st	2.48	2.46	2.32	2.44
	2nd	2.49	2.50	2.46*	2.52
Female/friends	1st	2.19	2.53	2.13	2.51
	2nd	2.14	2.62	2.11	2.61
Father/male guardian	1st	2.19	2.47	2.00	2.37
	2nd	2.24	2.46	2.17*	2.43
Sister(s)	1st	2.16	2.48	2.06	2.47
	2nd	2.13	2.54	2.24	2.47
Teachers	1st	2.30	2.35	2.21	2.32
	2nd	2.34	2.44	2.30	2.39
Brother(s)	1st	1.85	2.08	1.65	2.10
	2nd	1.88	2.11	1.70	2.14
Male friends	1st	1.62	1.91	1.51	1.94
	2nd	1.61	1.98	1.45	1.93

T-test of paired samples significant at

*$p < .05$
**$p < .01$
***$p < .001$

Code for computing means:
3 Would encourage
2 Neutral or Don't Know
1 Would discourage

Attitudes Toward Occupations

On both the pre-test and post-test, students were presented with a list of 30 occupations and asked whether they thought each occupation should be held by only males, only females, or both males and females. At the time of the first survey, females were significantly more likely than males to say that an occupation should be held by both males and females for 19 of the 30 occupations listed (t-test). Therefore, at the first survey females had a less stereotypic outlook on careers than did males. For this reason separate analyses were conducted for males and females in the experimental and control schools. Females in the experimental and control schools were similar to each other in almost all instances on both pre - and post tests. On the pre-test there was a significant difference between groups on only one of the thirty occupations, and on the second survey on only two of the thirty occupations (Table 29). In all three instances the control group was more likely to say that an occupation should be held by both males and females. Females in the experimental schools changed significantly over time on six of the thirty occupations in stating that both males and females should hold the job. Females in the control schools changed over time on five of the thirty occupations in their opinion that an occupation should be held by both males and females. Those occupations for which females changed their opinions between the first and second survey were consistently those in which fewer females thought the job should be held by both sexes at the time of the first survey. All of the occupations on which change occurred were ones where less than 70% of the females initially said the job should be held by both males and females. Therefore, since the majority of females showed less stereotyping in their attitudes toward specific occupations at the time of the first survey, there were fewer possibilities for change to occur. However, change toward non-stereotyped attitudes did occur among females in the experimental group on six of the thirteen occupations in which few females thought the job should be held by both males and females at the time of the original testing.

Table 29

Students' Perception That Occupations Should Be Held by Both Males and Females: Comparison of Change in Students' Responses Between First and Second Surveys for Experimental and Control Groups

Occupation	Time of Survey	Comparison of Mean Values on First and Second Surveys: Experimental Group-Means Males (N = 133)	Experimental Group-Means Females (N = 110)	Control Group-Means Males (N = 104)	Control Group-Means Females (N = 108)
Guidance Counselor	1st	1.94	1.96	1.98	1.98
	2nd	1.94	1.98	1.97	1.99
Store Salesclerk	1st	1.95	1.98	1.96	1.95
	2nd	1.86**	1.94	1.94	1.95
Real Estate Agent	1st	1.91	1.93	1.95	1.96
	2nd	1.93	1.93	1.95	1.93
Computer Programmer	1st	1.90	1.93	1.94	1.95
	2nd	1.88	1.95	1.95	1.99
Data Processor	1st	1.90	1.93	1.94	1.92
	2nd	1.88	1.97	1.88	1.94
Restaurant Manager	1st	1.84	1.94	1.79	1.96
	2nd	1.84	1.93	1.87	1.94
Elementary School Teacher	1st	1.82	1.87	1.85	1.90
	2nd	1.78	1.86	1.83	1.88
Veterinarian	1st	1.84	1.84	1.88	1.88
	2nd	1.87	1.83	1.86	1.91
Food Service Worker	1st	1.75	1.90	1.83	1.92
	2nd	1.82	1.93	1.76	1.94
Police Officer	1st	1.75	1.88	1.77	1.91
	2nd	1.76	1.89	1.79	1.91
Drafter/Draftsperson	1st	1.84	1.77	1.86	1.78
	2nd	1.82	1.86	1.86	1.81
School Principal	1st	1.70	1.85	1.70	1.85
	2nd	1.76	1.87	1.73	1.90
Dental Assistant	1st	1.57	1.80	1.61	1.86
	2nd	1.68*	1.84	1.65	1.85
Florist	1st	1.57	1.76	1.59	1.79
	2nd	1.67*	1.80	1.57	1.78
Librarian	1st	1.54	1.66	1.65	1.74
	2nd	1.59	1.69	1.56	1.79
Truck Driver	1st	1.52	1.67	1.54	1.74
	2nd	1.61	1.73	1.58	1.80
Flight Attendant	1st	1.54	1.65	1.57	1.67
	2nd	1.56	1.70	1.51	1.76
Electrician	1st	1.57	1.59	1.58	1.67
	2nd	1.64	1.72**	1.50*	1.78**
Farmer	1st	1.51	1.62	1.58	1.65
	2nd	1.54	1.70	1.55	1.65
Air Conditioning Mechanic	1st	1.52	1.54	1.58	1.60
	2nd	1.63*	1.63*	1.53	1.67
Plumber	1st	1.59	1.60	1.49	1.64
	2nd	1.56	1.59	1.49	1.68

Table 29 (continued)

Students' Perception That Occupations Should Be Held by
Both Males and Females: Comparison of Change in Students' Responses Between
First and Second Surveys for Experimental and Control Groups

Occupation	Time of Survey	Comparison of Mean Values on First and Second Surveys: Experimental Group-Means Males (N = 133)	Experimental Group-Means Females (N = 110)	Control Group-Means Males (N = 104)	Control Group-Means Females (N = 108)
Cosmetologist	1st	1.53	1.64	1.39	1.70
	2nd	1.52	1.70	1.50*	1.70
Nurse	1st	1.44	1.58	1.48	1.68
	2nd	1.56**	1.70**	1.56	1.75*
Child Care Aide	1st	1.47	1.58	1.50	1.59
	2nd	1.55	1.64	1.62**	1.66
Licensed Practical Nurse	1st	1.43	1.62	1.44	1.65
	2nd	1.53**	1.70	1.49	1.73
Secretary	1st	1.42	1.51	1.49	1.61
	2nd	1.58***	1.59	1.50	1.73*
Automobile Mechanic	1st	1.40	1.55	1.43	1.64
	2nd	1.43	1.62	1.46	1.66
Machine & Metal Worker	1st	1.39	1.48	1.44	1.52
	2nd	1.49*	1.60*	1.45	1.59*
Welder	1st	1.42	1.43	1.36	1.56
	2nd	1.52*	1.61*	1.43	1.62*
Construction Worker	1st	1.32	1.45	1.29	1.55
	2nd	1.41*	1.61*	1.37	1.65*

T-test of paired samples significant at
*p <.05
**p <.01
***p <.001

Code for computing means:
2 Job for both males and females
1 Job for males only or females only

Table 30

Students' Perception That Occupations Should Be Held by Both Males and Females: Comparison of Responses of Experimental and Control Groups at First Survey and at Second Survey

Occupation	Group	Mean Values of Control and Experimental Groups: Males in Control and Exp. Gr. (N = 104/133) First Survey	Males in Control and Exp. Gr. (N = 104/133) Second Survey	Females in Control and Exp. Gr. (N = 108/110) First Survey	Females in Control and Exp. Gr. (N = 108/110) Second Survey
Guidance Counselor	Con.	1.98	1.97	1.98	1.99
	Exp.	1.94	1.95	1.96	1.98
Store Salesclerk	Con.	1.96	1.94	1.95	1.95
	Exp.	1.95	1.86*	1.98	1.94
Real Estate Agent	Con.	1.95	1.95	1.96	1.93
	Exp.	1.91	1.92	1.94	1.93
Computer Programmer	Con.	1.93	1.95	1.95	1.99
	Exp.	1.90	1.88*	1.93	1.92*
Data Processor	Con.	1.93	1.88	1.92	1.94
	Exp.	1.90	1.88	1.94	1.97
Restaurant Manger	Con.	1.79	1.87	1.96	1.94
	Exp.	1.84	1.83	1.94	1.93
Elementary School Teacher	Con.	1.85	1.83	1.90	1.88
	Exp.	1.83	1.77	1.87	1.86
Veterinarian	Con.	1.87	1.86	1.88	1.91
	Exp.	1.82	1.85	1.84	1.85
Food Service Worker	Con.	1.83	1.76	1.92	1.94
	Exp.	1.75	1.80	1.89	1.93
Police Officer	Con.	1.76	1.79	1.91	1.91
	Exp.	1.75	1.76	1.87	1.89
Drafter/Draftsperson	Con.	1.85	1.86	1.79	1.81
	Exp.	1.84	1.81	1.76	1.86
School Principal	Con.	1.77	1.73	1.85	1.90
	Exp.	1.69	1.75	1.84	1.87
Dental Assistant	Con.	1.61	1.66	1.86	1.85
	Exp.	1.56	1.68	1.81	1.83
Florist	Con.	1.59	1.56	1.79	1.79
	Exp.	1.56	1.66	1.77	1.80
Librarian	Con.	1.65	1.56	1.74	1.79
	Exp.	1.53	1.59	1.66	1.69
Truck Driver	Con.	1.54	1.58	1.75	1.79
	Exp.	1.52	1.61	1.70	1.72
Flight Attendant	Con.	1.56	1.51	1.67	1.76
	Exp.	1.54	1.55	1.64	1.69
Electrician	Con.	1.58	1.50	1.67	1.79
	Exp.	1.57	1.62	1.59	1.72
Farmer	Con.	1.58	1.56	1.65	1.66
	Exp.	1.50	1.52	1.60	1.69
Air Conditioning Mechanic	Con.	1.58	1.53	1.60	1.67
	Exp.	1.53	1.61	1.54	1.62
Plumber	Con.	1.48	1.48	1.64	1.68
	Exp.	1.58	1.56	1.59	1.59

Table 30 (continued)

Students' Perception That Occupations Should Be Held by
Both Males and Females: Comparison of Responses of
Experimental and Control Groups at First Survey and at Second Survey

Occupation	Group	Mean Values of Control and Experimental Groups: Males in Control and Exp. Gr. (N = 104/133) First Survey	Males in Control and Exp. Gr. (N = 104/133) Second Survey	Females in Control and Exp. Gr. (N = 108/110) First Survey	Females in Control and Exp. Gr. (N = 108/110) Second Survey
Cosmetologist	Con.	1.38	1.50	1.70	1.71
	Exp.	1.52*	1.53	1.63	1.69
Nurse	Con.	1.48	1.55	1.68	1.76
	Exp.	1.43	1.55	1.58	1.70
Child Care Aide	Con.	1.49	1.63	1.59	1.66
	Exp.	1.47	1.55	1.57	1.64
Licensed Practical Nurse	Con.	1.43	1.48	1.65	1.73
	Exp.	1.42	1.53	1.61	1.69
Secretary	Con.	1.48	1.49	1.61	1.73
	Exp.	1.42	1.56	1.50	1.59*
Automobile Mechanic	Con.	1.42	1.45	1.64	1.64
	Exp.	1.40	1.43	1.54	1.62
Machine & Metal Worker	Con.	1.44	1.44	1.52	1.59
	Exp.	1.39	1.49	1.48	1.60
Welder	Con.	1.35	1.42	1.56	1.61
	Exp.	1.42	1.51	1.42	1.62
Construction Worker	Con.	1.28	1.36	1.55	1.66
	Exp.	1.32	1.42	1.45*	1.61

T-test of groups significant at
*p < .05
**p < .01
***p < .001

Code for computing means:
2 Job for both males and females
1 Job for males only or females only

Table 31
Change in Proportion of Female Students Who Think Occupations Should Be Held by Both Males and Females

Occupation	Control Schools (N=108) First Survey %	Control Schools (N=108) Change from First to Second Survey %	Experimental Schools (N=110) First Survey %	Experimental Schools (N=110) Change from First to Second Survey %
Guidance Counselor	98.1	+1.0	96.3	+1.8
Store Salesclerk	95.3	+0.2	98.1	-3.7
Real Estate Agent	96.3	-2.9	93.5	-1.0
Computer Programmer	95.3	+3.8	92.7	-1.0
Data Processor	91.5	-2.9	93.6	-1.7
Restaurant Manager	96.3	-1.9	91.7	+0.9
Elementary School Teacher	89.7	-1.7	87.3	-1.2
Veterinarian	87.7	+3.0	84.4	-1.2
Food Service Worker	91.6	+2.8	89.0	+3.6
Police Officer	90.7	0	87.3	+1.5
Drafter/Draftsperson	78.6	+2.7	76.4	+7.6
School Principal	85.0	+4.8	84.3	+2.6
Dental Assistant	86.0	-0.8	80.7	+2.6
Florist	79.4	-0.9	76.9	+2.7
Librarian	73.8	+4.9	66.1	+2.4
Truck Driver	74.5	+4.2	67.6	+4.4
Flight Attendant	67.3	+8.4	62.0	+7.4
Electrician	66.7	+11.8	59.1	+11.0
Farmer	65.1	+2.6	60.4	+8.5
Air Conditioning Mechanic	59.8	+7.2	54.1	+7.9
Plumber	64.5	+3.1	58.7	+0.2
Cosmetologist	69.5	+1.8	60.7	+6.6
Nurse	67.5	+8.4	57.8	+12.0
Child Care Aide	58.9	+7.5	57.3	+6.6
Licensed Practical Nurse	65.4	+7.7	61.5	+7.9
Secretary	60.7	+12.4	50.5	+8.4
Automobile Mechanic	63.8	+0.1	51.9	+7.9
Machine & Metal Worker	51.9	+7.4	47.7	+9.8
Welder	56.1	+5.0	41.7	+20.0
Construction Worker	55.1	+10.6	45.5	+13.4

Table 32
Change in Proportion of Male Students Who Think Occupations Should Be Held by Both Males and Females

Occupation	Control Schools (N=104) First Survey %	Control Schools (N=104) Change from First to Second Survey %	Experimental Schools (N=133) First Survey %	Experimental Schools (N=133) Change from First to Second Survey %
Guidance Counselor	98.0	-0.9	94.5	+0.2
Store Salesclerk	96.1	-2.0	95.3	-8.9
Real Estate Agent	95.1	0	91.3	+0.3
Computer Programmer	93.1	+2.0	89.8	-2.0
Data Processor	93.1	-4.9	89.7	-1.9
Restaurant Manager	79.4	+7.9	84.0	-1.1
Elementary School Teacher	85.1	-1.8	82.5	-5.6
Veterinarian	87.1	-0.8	82.4	+3.0
Food Service Worker	83.3	-6.8	75.4	+4.9
Police Officer	76.5	+2.9	74.8	+1.0
Drafter/Draftsperson	85.3	+1.0	84.1	-3.3
School Principal	77.2	-3.9	69.3	+5.5
Dental Assistant	60.8	+4.9	55.9	+12.5
Florist	58.8	-2.4	55.9	+10.5
Librarian	64.7	-8.8	52.8	+6.0
Truck Driver	53.9	+3.9	52.4	+8.7
Flight Attendant	56.4	-5.4	54.0	+1.0
Electrician	57.8	-7.8	57.1	+5.2
Farmer	57.8	-1.9	50.0	+2.3
Air Conditioning Mechanic	57.8	-4.9	53.2	+7.9
Plumber	48.0	0	58.3	-2.2
Cosmetologist	38.2	+11.8	52.0	+0.7
Nurse	47.5	+7.4	42.5	+12.1
Child Care Aide	49.0	+13.7	47.2	+7.8
Licensed Practical Nurse	43.1	+4.9	42.1	+11.3
Secretary	48.0	+1.0	41.7	+14.8
Automobile Mechanic	42.2	+2.9	40.5	+2.2
Machine & Metal Worker	43.6	+0.5	37.8	+11.4
Welder	35.3	+6.9	41.7	+9.1
Construction Worker	28.4	+7.9	31.7	+9.8

On both pre and post-tests, males in the experimental and control were similar in almost all instances in their perceptions concerning whether jobs should be held by both males and females. They differed on only one of thirty occupations at the first survey and only two of thirty at the second survey. However, on a paired comparison of response using a t-test, males in the experimental schools changed on ten of the thirty occupations; nine of these were in the direction of believing the job appropriate for both males and females. These nine occupations where the experimental males became less stereotyped in their attitudes were all among the nineteen items which were lowest in the proportion of males believing they should be held by both sexes. Therefore, change was most likely to occur among males in the experimental group where the fewest males thought the job should be held by both sexes at the time of the original survey. Males in the control group changed significantly on only three of the occupations, and only two of these changes were in the direction of believing that both sexes should hold a job. Therefore, males in the experimental group were more likely than males in the control group to show a change toward less stereotyped attitudes.

VI

CONCLUSIONS AND RECOMMENDATIONS

The findings from this project to determine the effectiveness of methods to reduce sex-role stereotyping in occupational education programs suggest several approaches which might be used with students to address this problem. In general, the results provide evidence that classroom activities which provide students with information about career decision-making and non-traditional career choices can affect students' attitudes and opinions about occupational choice in the direction of developing more positive attitudes towards non-traditional careers.

The conclusions which can be drawn from the activities of this project are the following:

1. Parents, siblings and peers are important influences on students' attitudes towards non-traditional careers.

   Family members and peers were named by students as important sources of advice on occupational decisions and perceived sources of encouragement for an individual's decision to enter a non-traditional occupation. Student's mothers were ranked first both as a source of advice and support. In contrast, one's male friends were seen as least encouraging and most discouraging towards a decision to enter a non-traditional occupation.
   A number of statistically significant differences between the responses of males and females were obtained on these questions about advice and support. Females generally perceived more support from others for selection of a non-traditional occupation.

2. Female students are more apt to consider a non-traditional career choice and are more likely to view occupations as appropriate for both sexes; males are more stereotyped in their attitudes.

3. Male students in the experimental group evidenced the greatest change in the direction of less stereotyped attitudes.

   The activities and discussions conducted in the experimental classes had the greatest impact upon the male students. These students showed significant changes in their opinions that occupations are appropriate for both sexes. Greater change also occurred in attitudes towards occupations for which specific information was presented.

   Female students also showed positive change in their attitudes towards occupations being held by members of both sexes. However, since the females started with less stereotypic attitudes, the amount of change was not as great as for the males.

4. By eighth and tenth grades, males and females show significant differences on many items related to careers and career decision-making.

   The early influence of sex-role socialization has been extensively documented. The findings of the present study reinforce the existence of sex-stereotyping in attitudes toward non-traditional careers. Although this study illustrated that changes in attitudes can be observed even after a relatively brief contact with students, even earlier intervention is desirable.

5. Both male and female students became more alike in the characteristics an individual would look for in choosing an occupation.

   The process of classroom discussions and talking with one's parent(s) appeared to have an influence on students' opinions about what factors would be important in selecting an occupation. On the post-test, the factors chosen by males and females became more similar. Females, in particular, were more likely to consider factors such as good salary and flexible hours as important in their choice.

6. The process of devoting special attention to the problems of sex-stereotyping and information about non-traditional careers appears to produce change towards less stereotypic attitudes even when the contact period is brief.

Although changes were noted in the attitudes and opinions of members of the experimental group in moving towards less-stereotyping, even the control group evidenced some positive changes. In fact, the process of completing the survey instruments seemed to contribute toward this change. Control group members commented that they liked the task of completing the survey, remarking "it made me think about careers" or "I hadn't thought much about those things before." These observations lend support to an argument in favor of devoting special time to a consideration of careers and options.

These findings from the present study suggest several recommendations for implementation by educators. The findings also provide further reinforcement for some of the recommendations from earlier phases of project effort. These recommendations include:

1. Provide opportunities for students to discuss career decision-making and issues relating to sex-stereotyping of occupations in groups.

   Students seemed to benefit from the interaction with other students in discussing non-traditional careers and information about career decisions. Further benefits seem to be obtained by the process of specifically focusing on these topics with students. Since many students did not regard some of their contacts with counselors as sessions involving career decision-making, counselors might make more extensive use of group activities to reach students with career information.

2. Build upon the influence of parents and peers as a support system for students who are making career decisions.

3. Increase the involvement of parents in the decision process, especially with regard to non-traditional career options. This might include providing opportunities for parents to interact with their sons and daughters as well as providing information about careers to parents for discussions in the home.

4. Develop special programs to address the particular needs of male and female students for consideration of problems related to occupational stereotyping and career decision-making. Since male and female students appeared to start with somewhat different attitudes and information about non-traditional careers, special efforts might be made to address these differences. For example, males

may require more information to bring them to the level of awareness displayed by the female students in the study. Such awareness may also help to diminish the perception that male peers are least supportive of non-traditional career choices.

In general, a recommendation from the study is that change can be observed in the attitudes of students toward non-traditional careers even if the treatment time is limited. Since schools have a variety of demands on available classroom time, it is unlikely that large blocks of time can be made available for long-term programs in most schools. However, it is encouraging that changes in students' attitudes were noted after a contact period of only two class sessions. Educators might be encouraged to provide time, even if limited, for consideration of these important issues. Such interventions, especially when initiated early in students' school careers, can serve as an initial step in expanding occupational choices for students.

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Appendix A

SAMPLE MATERIALS FOR PARTICIPATING SCHOOLS

MATERIAL FOR SCHOOL IN CONTROL GROUP

PARTICIPATION IN THE STUDY TO REDUCE OCCUPATIONAL SEX-ROLE STEREOTYPING: WHAT'S INVOLVED FOR YOUR SCHOOL

What Are The Objectives Of This Study? How Do I Explain It To Parents And Students?

Some people choose careers because the career is considered "appropriate" for one's sex rather than on the basis of one's own abilities and interests. The purpose of this study is to present materials to 8th and 10th graders that will help them consider potential occupations on the basis of what is important to the individual in a career rather than what is a traditional "male" or "female" occupation. We hope to develop discussions between students and their parents and their peers concerning career choices. In order to see if these methods are really effective with students, two groups of students will be compared. Some students will participate in a series of activities and other students will only be surveyed. Your students will only take a survey questionnaire at the present time. However, if our materials and methods are helpful to other students, we will share them with your school for your future use.

What Do The "Experimental" Schools Do That Is Different From Our Participation?

The schools in the experimental group are being asked to permit 50 students to spend two class periods in a consideration of career choice. Parents will receive materials about occupations and the students will talk with their parents about career decisions. If your school is interested in this for future use, we would be glad to share the process and materials that are successful.

Which Of Our Students Should Participate?

We would like to obtain a cross-section of students, some who might be planning post-secondary education, some who might not. The students may be from a class, a study hall, or a home room. The only qualification is that the same students be available about a month later for the second questionnaire.

What Do The Students Do?

Fifty students will be asked to complete a 20 minute questionnaire, preferably shortly after April 27. A copy is enclosed. The same 50 students will be asked to take a shortened 15 minute version of this questionnaire about 4 weeks later, or about May 25.

Will Students Be Identified In Any Way?	No student names will appear on the questionnaires. A code number will be assigned to each student so we can compare responses between the two administrations of the survey. The master code will be kept in a secure location using a method consistent with school policy.
Has This Questionnaire Been Approved By The State Education Department?	The questionnaire has been submitted for approval to the New York State Department of Education, Division of Occupational Education, Planning Research and Evaluation. The questionnaire will not be used until we have their clearance.
Who Administers The Questionnaire?	Our project staff can come to your school and administer the questionnaire, or it may be administered by local school staff members. We are happy to do what is most convenient for your school schedule.
Is There Community Involvement?	Local radio stations are being asked to play 30 second spot public service announcements concerning career choice. Copies of the script are enclosed.
Who Is Sponsoring This Study?	Funds are provided by the Division of Occupational Education Supervision, Office of Special Programs in Occupational Education under the terms of Grant VEA-80-3A-1117GS. The Project Director is Dr. Helen Veres, a Research Associate at the Cornell Institute for Occupational Education, New York State College of Agriculture and Life Sciences, Cornell University, Ithaca, New York 14853. She is assisted by Dr. Mary Margaret Carmichael, Research Associate. They can be contacted at 607-256-6514.
Will Our School Get A Copy Of The Results?	Yes, we will be happy to provide copies of the final report to the school. We will not identify the responses from the specific cooperating schools to protect their privacy.

MATERIAL FOR SCHOOLS IN EXPERIMENTAL GROUP

PARTICIPATION IN THE STUDY TO REDUCE OCCUPATIONAL SEX-ROLE STEREOTYPING: WHAT'S INVOLVED FOR YOUR SCHOOL

What Are The Objectives Of This Study? How Do I Explain It To Parents And Students?

Some people choose careers because the career is considered "appropriate" for one's sex rather than on the basis of one's own abilities and interests. The purpose of this study is to present materials to 8th and 10th graders that will help them consider potential occupations on the basis of what is important to the individual in a career rather than what is a traditional "male" or "female" occupation. We hope to develop discussions between students and their parents and their peers concerning career choices. In order to see if these methods are really effective with students, two groups of students will be compared. Some students will participate in a series of activities and other students will only be surveyed. Your students will participate in the special activities which focus on career decision-making and career information.

What Will The Students Do?

Fifty students will spend two class periods with staff members from the Cornell Institute for Occupational Education in exploration of career choices and career decision-making. At the start of the first session, a 20-minute questionnaire (copy enclosed) will be administered. the parents of these students will also receive materials about occupations and the students will talk with their parents about career decisions. A copy of the material for parents is attached.

The second class session will continue the examination of career decisions. The major objective will be the selection of a career based on one's own interests and abilities and accurate career information. Approximately one month later, the students will complete an abbreviated 15-minute version of the original survey questionnaire.

Which Of Our Students Should Participate?

Approximately 50 students from a selected grade level should be chosen to participate. Since the activities will be conducted in a group setting, a class in which the students meet on a regular basis might be used more easily. However, any other arrangement which fits the school schedule and which permits the same students to

	complete the planned activities might also be employed. If two classes of 25 students each are selected, it is recommended that they be from different "tracks" within the school so that a cross-section of the student population be obtained.
Will Students Be Identified In Any Way?	No student names will appear on the questionnaires. A code number will be assigned to each student so we can compare responses between the two administrations of the survey. A master code will be kept in a secure location using a method consistent with school policy. In the set of questions used by students for discussion with their parents no names are requested or used.
Who Conducts The Activities?	The classroom activities will be conducted by staff members of the Cornell Institute for Occupational Education.
Has This Questionnaire Been Approved By The State Education Department?	The questionnaire has been submitted for approval to the New York State Department of Education, Division of of Occupational Education, Planning Research and Evaluation. The questionnaire will not be used until we have their clearance.
Who Administers The Followup Questionnaire?	Our project staff can come to your school and administer the questionnaire, or it may be administered by local school staff members. We are happy to do what is most convenient for your school schedule.
Is There Community Involvement?	Local radio stations are being asked to play 30-second spot public service announcements concerning career choice. Copies of the script are enclosed.
Who Is Sponsoring This Study?	Funds are provided by the Division of Occupational Education Supervision, Office of Special Programs in Occupational Education under the terms of Grant VEA-80-3A-1117GS. The Project Director is Dr. Helen Veres, a Research Associate at the Cornell Institute for Occupational Education, New York State College of Agriculture and Life Sciences, Cornell University, Ithaca, New York 14853. She is assisted by Dr. Mary Margaret Carmichael, Research Associate. They can be contacted at 607-256-6514.
Will Our School Get A Copy Of The Results?	Yes, we will be happy to provide copies of the final report to the school. We will not identify the responses from the specific cooperating schools to protect their privacy.

Appendix B

SURVEY INSTRUMENTS

STUDENT SURVEY #1

Your class is taking part in a project to assist students in making career decisions. We hope you will help by answering the following questions. All answers will be confidential; no names will be used. If you want more information about the interview or project, please write or phone us.

Helen C. Veres
Research Associate

Cornell Institute for Occupational Education
Department of Education
New York State College of Agriculture and Life Sciences
Cornell University
Ithaca, N.Y. 14853

STUDENT SURVEY

1. Your age? (Check one)
   1. ____12 years or younger
   2. ____13 years of age
   3. ____14 years of age
   4. ____15 years of age
   5. ____16 years of age
   6. ____17 years or older

2. Your sex?
   1. ____female
   2. ____male

3. Your grade? (Check one)
   1. ____7th grade or lower
   2. ____8th grade
   3. ____9th grade
   4. ____10th grade
   5. ____11th grade
   6. ____12th grade

4. How do you describe yourself? (Check one) (You may omit this question if you want to).
   1. ____American Indian, Native American
   2. ____Asian or Asian-American
   3. ____Black, or Afro-American
   4. ____Hispanic
   5. ____White
   6. ____Other

5. With whom do you live? (Check one)
   1. ____Both of my parents or step-parents
   2. ____Mother only
   3. ____Father only
   4. ____Other

6. Do you have? (Check YES or NO for each)

	Yes	No
Older brother(s)	___	___
Older sister(s)	___	___
Younger brother(s)	___	___
Younger sister(s)	___	___

7. What type of employment does your father (or male guardian) usually have? (For example, salesperson, teacher, cook, bank teller, etc.)_____

8. What type of employment does your mother (or female guardian) usually have? (For example, salesperson, teacher, cook, bank teller, etc.) If your mother does not work outside the home, write "homemaker".

9. What is the higest amount of education you plan to complete? Check only one.

   1. ____Some high school
   2. ____Graduate from high school
   3. ____Trade or technical school
   4. ____Business school
   5. ____Two-year college
   6. ____Four-year college
   7. ____Graduate or professional school

10. Which one of these statements about your career choice best applies to you?

   1. ____I have made a career or occuptional choice. (Go to Question 11)
   2. ____I have an idea of the general type of career I want. (Go to Question 11)
   3. ____I am undecided on a career choice. (Skip Question 11 and go on to Question 12).

11. What career or occupation do you plan to enter after you complete your edcuation? Please be as specific as possible.

_____

12. Do you feel you have enough information about programs available in your high school or areas occupational center to prepare you for a future career?

    1. ____Yes
    2. ____No
    3. ____Don't know

13. Have you ever talked with a school counselor about choosing a career?

    1. ____Frequently, three or more times a year
    2. ____Once or twice a year
    3. ____Never

14. Which of the following ways would be most helpful to you in obtaining information about possible careers or about programs to prepare you for a career or job? In Column I check those methods you think would be helpful to you. Then, in Column II, check any methods which you have actually used.

	Column I		Column II	
	Method would be helpful to me		I have used this method	
	Yes	No	Yes	No
Information sent to me and my parent(s) at home	____	____	____	____
Information or announcements on the radio	____	____	____	____
Information or announcements on TV	____	____	____	____
Classroom discussions	____	____	____	____
Conference with a counselor	____	____	____	____
Printed materials available from the guidance office	____	____	____	____
Visits to school programs	____	____	____	____
Talking with my teachers	____	____	____	____
Talking with my parents	____	____	____	____
Talking with my friends	____	____	____	____

15. Who would you ask for advice to help you decide on an occupation? Check all that apply.

____No one
____School counselor
____Teacher
____Male friends
____Female friends
____Mother or stepmother
____Father or stepfather
____Brother
____Sister
____Other relative
____ Other

16. In selecting your future occupation or career what would be the three most important reasons for your choice? Place a 1 in front of the most important reason, 2 in front of the next most important, 3 in front of the third most important.

____Good salary
____Chance to work with people
____Chance to get ahead, to get promotions
____Many jobs are available, there is a lot of steady work
____Outdoor work
____Chance to work with my hands
____Other people think the job is important
____A chance to use my particular abilities and skills
____A chance to help other people
____Freedmon from supervision, being able to work on my own
____Helping to make the world a better place to live
____Flexivle hours or convenient working schedule

17. In 11th or 12th grade do you plan to take a series of courses or a program to prepare you to enter an occupation?

____YES - Which occupational program do you plan to enter?

Please check only one area.

1. ___ Business, such as: data processing, key punch operator,
2. ___ Building trades, such as: carpentry, masonry, plumbing, electrician, drafting
3. ___ Technical trades, such as: air-conditioning, machine shop, printing
4. ___ Health occupations, such as: licensed practical nurse, nurse assistant, dental assistant
5. ___ Mechanics, such as: auto mechanics, auto body repair, auto machine shop
6. ___ Home economics occupations, such as: child care aide, food service worker
7. ___ Personal services, such as: cosmetologist
8. ___ Agricultural occupations, such as: tractor mechanics, ornamental horticulture
9. ___ Plan to take an occupational program but don't know which one.

____NO - I do not plan to take any occupational program in high school.

18. Did you ever think seriously about entering an occupation that is not traditional for your sex? (For example, a female becoming an auto mechanic or a veterinarian, or a male becoming a secretary or a nurse).

1. ____Yes, I have thought about it
2. ____No

19. How would each of the following people feel if you decided to enter an occupation that is not traditional for your sex? If one of these does not apply to you, for example, if you do not have any sisters, than check "Does not apply" for that person.

How would they feel?	Would encourage me	Would neither encourage or discourage me	Would discourage me	I don't know	Does not apply
Mother or female guardian					
Father or male guardian					
Male friends					
Female friends					
School counselor					
Teacher(s)					
Brother(s)					
Sister(s)					

20. Suppose you were thinking about entering an occupation that was not traditional for your sex. How important would each of the following factors be in helping you decide to enroll in a program that would prepare you for the occupation.

	Very Important	Somewhat Important	Not Important
Trying out the course for 6 weeks before signing up for it			
A 1-year rather than a 2-year or longer program in the field			
The course offered at the school you now attend, rather than at BOCES or a vocational/technical high school			
At least one other student of your sex in the course			
At least 20% of the students in the course members of your sex (that would be 6 out of 30 students, for example)			
Female friends in the course			
Males friends in the course			
More job opportunities			
Earn good money			
Parents thought it was a good course for you			
Female friends thought it was a good course for you			
Male friends thought it was a good course for you			
Guidance counselor thought it was a good course for you			
Students in the course would be friendly			
The teacher would be fair			

WHOM DO YOU THINK SHOULD HOLD THESE JOBS?

ONLY MALES?

ONLY FEMALES?

BOTH MALES AND FEMALES?

Answer according to your own opinion, not what other people say.

In my opinion, the job should be held by: (check ONE)

Only Males	Only Females	Both Males and Females	Occupation
____	____	____	Plumber
____	____	____	Police officer
____	____	____	Store salesclerk
____	____	____	Truck driver
____	____	____	Flight attendant
____	____	____	Nurse
____	____	____	Farmer
____	____	____	Guidance counselor
____	____	____	Secretary
____	____	____	School principal
____	____	____	Real estate agent
____	____	____	Restaurant manager
____	____	____	Veterinarian
____	____	____	Automobile mechanic
____	____	____	Cosmetologist
____	____	____	Construction worker
____	____	____	Data processor
____	____	____	Electrician
____	____	____	Machine and metal worker
____	____	____	Drafter/draftsperson
____	____	____	Child care aide
____	____	____	Welder
____	____	____	Elementary school teacher
____	____	____	Air conditioning mechanic
____	____	____	Dental assistant
____	____	____	Computer programmer
____	____	____	Librarian
____	____	____	Florist
____	____	____	Licensed practical nurse
____	____	____	Food service worker

STUDENT SURVEY #2

Your class is taking part in a project to assist students in making career decisions. We hope you will help by answering the following questions. All answers will be confidential; no names will be used. If you want more information about the interview or project, please contact us.

Helen C. Veres
Research Associate

Cornell Institute for Occupational Education
Department of Education
New York State College of Agriculture and Life Sciences
Cornell University
Ithaca, N.Y. 14853

1. Which one of these statements about your career choice best applies to you?

   1. ____I have made a career or occupational choice. (Go to Question 2)
   2. ____I have an idea of the general type of career I want. (Go to Question 2)
   3. ____I am undecided on a career choice. (Skip Question 2 and go on to Question 3)

2. What career or occupation do you plan to enter after you complete your education? Please be as specific as possible.

   _____

3. Do you feel you have enough information about programs available in your high school or area occupational center to prepare you for a future career?

   1. ____Yes
   2. ____No
   3. ____Don't know

4. Which of the following ways would be most helpful to you in obtaining information about possible careers or about programs to prepare you for a career or job? In Column I check those methods you think would be helpful to you. Then, in Column II, check any methods which you have actually used.

	Column I: Method would be helpful to me		Column II: I have used this method	
	Yes	No	Yes	No
Information sent to me and my parent(s) at home	____	____	____	____
Information or announcements on the radio	____	____	____	____
Information or announcements on TV	____	____	____	____
Classroom discussions	____	____	____	____
Conference with a counselor	____	____	____	____
Printed materials available from the guidance office	____	____	____	____
Visits to school programs	____	____	____	____
Talking with my teachers	____	____	____	____
Talking with my parents	____	____	____	____
Talking with my friends	____	____	____	____

5. Who would you ask for advice to help you decide on an occupation? Check all that apply.

____No one
____School counselor
____Teacher
____Male friends
____Female friends
____Mother or stepmother
____Father or stepfather
____Brother
____Sister
____Other relative
____Other

6. In selecting your future occupation or career what would be the three most important reasons for your choice? Place a 1 in front of the most important reason, 2 in front of the next most important, 3 in front of the third most important.

____Good salary
____Chance to work with people
____Chance to get ahead, to get promotions
____Many jobs are available, there is a lot of steady work
____Outdoor work
____Chance to work with my hands
____Other people think the job is important
____A chance to use my particular abilities and skills
____A chance to help other people
____Freedom from supervision, being able to work on my own
____Helping to make the world a better place to live
____Flexible hours or convenient working schedule

7. Did you ever think seriously about entering an occupation that is not traditional for your sex? (For example, a female becoming an auto mechanic or a veterinarian, or a male becoming a secretary or a nurse).

1. ____Yes, I have thought about it
2. ____No

8. How would each of the following people feel if you decided to enter an occupation that is not traditional for your sex? If one of these does not apply to you, for example, if you do not have any sisters, then check "Does not apply" for that person.

How would they feel?	Would encourage me	Would neither encourage or discourage me	Would discourage me	I don't know	Does not apply
Mother or female guardian					
Father or male guardian					
Male friends					
Female friends					
School counselor					
Teacher(s)					
Brother(s)					
Sister(s)					

WHOM DO YOU THINK SHOULD HOLD THESE JOBS?

ONLY MALES?

ONLY FEMALES?

BOTH MALES AND FEMALES?

Answer according to your own opinion, not what other people say.

In my opinion, the job should be held by: (check ONE)

Only Males	Only Females	Both Males and Females	Occupation
____	____	____	Plumber
____	____	____	Police officer
____	____	____	Store salesclerk
____	____	____	Truck driver
____	____	____	Flight attendant
____	____	____	Nurse
____	____	____	Farmer
____	____	____	Guidance counselor
____	____	____	Secretary
____	____	____	School principal
____	____	____	Real estate agent
____	____	____	Restaurant manager
____	____	____	Veterinarian
____	____	____	Automobile mechanic
____	____	____	Cosmetologist
____	____	____	Construction worker
____	____	____	Data processor
____	____	____	Electrician
____	____	____	Machine and metal worker
____	____	____	Drafter/draftsperson
____	____	____	Child care aide
____	____	____	Welder
____	____	____	Elementary school teacher
____	____	____	Air conditioning mechanic
____	____	____	Dental assistant
____	____	____	Computer programmer
____	____	____	Librarian
____	____	____	Florist
____	____	____	Licensed practical nurse
____	____	____	Food service worker

9. The class activities used in this project will be adapted for use with students in other schools. How helpful to you were each of the materials or activities in learning more about careers or in making career decisions? Circle the number of the answer that best shows your opinion.

	Not Helpful		Very Helpful		Can't Remember	
Filmstrip, "Jobs and Gender"	1	2	3	4	5	6
Booklet, An Equal Chance: A Parent's Introduction to Sex Fairness in Occupational Education	1	2	3	4	5	6
Summary, "Career Opportunities for the Eighties"	1	2	3	4	5	6
Interview with parent or adult about careers	1	2	3	4	5	6
Class Discussions	1	2	3	4	5	6

10. In the past month have you seen or heard any information about careers which are non-traditional for men or women? (Check Yes or No)

	Yes	No
Radio	____	____
TV	____	____
Newspaper	____	____
Magazines	____	____

PARENT OPINION SURVEY ON CAREER DECISIONS

Your son or daughter's class is taking part in a project to assist students in making career decisions. As one of the activities, students are interviewing parents or other adults to obtain their opinions on what is important in choosing a career. We hope you will assist in this task. All answers will be confidential; no names will be used. If you need more information about the interview or project, please write or phone us.

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No Names Please

QUESTIONS FOR PARENT, GUARDIAN OR OTHER ADULT

Before asking these questions, please ask the adult to look at both the booklet An Equal Chance: A Parent's Introduction to Sex Fairness in Occupational Education and the material on career opportunities.

Is this interview being conducted by a:

1. ____Male student NO NAMES PLEASE
2. ____Female students

Is this interview with an:

1. ____Adult male
2. ____Adult female

1. Are you now employed or have you been employed in the past few years?

   1. ____Yes, (Go to Question 2)
   2. ____No, (Go to Question 5)

2. What is your occupation?_____

   _____

3. Which of the following are the best parts of your job? Check all the things you like about your job.

   ____Good salary
   ____Chance to work with people
   ____Chance to get ahead, get promotions
   ____There are many jobs available, lots of steady work
   ____Outdoor work
   ____Chance to work with my hands
   ____Other people think the job is important
   ____A chance to use my particular abilities and skills
   ____A chance to help other people
   ____Freedom from supervision, being able to work on my own
   ____Helping to make the world a better place to live
   ____Flexible hours or convenient working schedule

4. If a teenager were interested in your work, would you advise him/her to prepare to enter this occupation?

   if the teenager were a male?

   1. ____Yes 2. ____No

   if the teenager were a female?

   1. ____Yes 2. ____No

5. The job market is constantly changing, for example, some workers of today hold jobs that didn't exist a few years ago, other workers are being laid off from jobs in declining industries. If you were choosing an occupation today, what would you chose?

   _____

6. According to predictions, approximately 90% of the girls now in high school will work for pay at some time of their lives, and 60% of the girls will work full time outside their homes for at least 30 years. For the majority who will be working, what advice would you give them? Which of the following do you think a girl should consider in choosing an occupation:

	Important for a teenage girl to consider	
	Yes	No
Good salary	____	____
Chance to work with people	____	____
Many jobs are available, there is a lot of steady work	____	____
Outdoor work	____	____
Chance to work with your hands	____	____
Other people think the job is important	____	____
A chance to use your particular abilities and skills	____	____
A chance to help other people	____	____
Freedom from supervision, being able to work on your own	____	____
Helping to make the world a better place to live	____	____
Flexible hours or convenient working schedule	____	____

7. Almost all teenage boys anticipate an occupation or job as adults. Yet not all adult men believe they choose the job that is best for them. Some wish they had prepared for a different occupation. Which of the following would you suggest a boy consider in thinking about an occupation?

	Improtant for a teenage boy to consider	
	Yes	No
Good salary	_____	_____
Chance to work with people	_____	_____
Chance to get ahead, to get promotions	_____	_____
Many jobs available, there is a lot of steady work	_____	_____
Outdoor work	_____	_____
Chance to work with your hands	_____	_____
Other people think the job is important	_____	_____
A chance to use your particular abilities and skills	_____	_____
A chance to help other people	_____	_____
Freedom from supervision, being able to work on your own	_____	_____
Helping to make the world a better place to live	_____	_____
Flexible hours or convenient working schedule	_____	_____

8. These materials will be adapted for use with students in other schools. What is your opinion about the helpfulness of each of the materials to parents in discussing career information and decision-making?

	Not helpful						Very helpful
Booklet "An Equal Chance: A Parent's Introduction to Sex Fairness in Occupational Education"	1	2	3	4	5	6	7
Career Opportunities for the Eighties	1	2	3	4	5	6	7
Parent-Student Interview	1	2	3	4	5	6	7

Appendix C

STUDENT ACTIVITIES

INTRODUCTORY LESSON:
CAREER CHOICE AND NON-TRADITIONAL CAREERS

OBJECTIVES;

To develop awareness of traditional and non-traditional female and male roles in the world of work.

To develop an understanding of the influence of one's own interests, aptitudes and values in career decision-making.

To increase communication between students and parents on the career decision-making process and on equal opportunities in vocational education for males and females.

GRADE LEVEL:

Eighth through tenth grades.

MATERIALS:

Film strip and accompanying tape Jobs and Gender, Part 1; film strip projector; screen; cassette player; chalk and chalk board or large chart and markers; sufficient copies for each student of the following materials:

1. Student Survey #1 - Student Questionnaire
2. An Equal Chance: A Parent's Introduction to Sex Fairness in Vocational Education - booklet
3. Parent Opinion Survey on Career Decisions

BACKGROUND:

Some people choose careers because the career is considered "appropriate" for one's sex rather than on the basis of one's own abilities and interests. The purpose of these lessons is to present materials that will help students consider potential occupations on the basis of what is important to the individual in a career rather than what is a traditional "male" or "female" occupation. Another purpose is to develop discussions between students and their parents and their peers concerning career choices. The students will participate in activities which focus on career information. The materials are intended for both male and female students; for those who plan for post-secondary education as well as those who plan to seek full-time employment following high school graduation.

THE LESSON:

The Student Survey #1 is administered during the first twenty minutes of the class period. Prior to administration, a short explanation is given concerning the purpose of the questionnaire. It is not a test, but rather is to focus the student's thoughts on career decision making and the processes involved. The questionnaire is designed to be self administering, all directions are included in the form. Students may use pencil or pen. Students were asked to write their names on a small page attached to the questionnaire and then to detach it. Therefore, only a code number was on the questionnaire to protect the confidentiality of responses. The names and code numbers were collected prior to administration. Major areas covered on the questionnaire included:

Background information on students;

Educational and career plans;

Attitudes toward extent of educational counseling and information;

Persons sought for advice and for counseling;

Factors involved in career choice;

Specific occupational programs or courses considered;

Consideration of non-traditional career;

Perception of attitudes of various persons concerning non-traditional careers;

Importance of various factors on enrollment in program that would prepare one for a non-traditional occupation;

Opinion on whom should hold various jobs.

The introduction to career decision making consisted of a discussion led by the teacher with the following questions:

Think about the question adults often asked you as a small child? "What do you want to be when you grow up?"

What were the responses you gave when you were 4 or 5 years old? (A fireman, a policemen, a nurse, a teacher)

Are your answers the same now or are they different? Your answers will continue to change even after you leave high school.

Approximately how many times does the average adult change jobs during his/her lifetime? (5 or 6 times)

What will you consider when you think about a career? Your interests - What you are "good at" - Information from others about jobs - What other people think.

The last statement, "What other people think" implies that it is hard to enter an occupation when you are going to be different, but more people are doing it. People used to think of one job as appropriate for males, another for females. That attitude is changing now and more persons are entering "non-traditional" jobs.

Part 1 of the film strip Jobs and Gender was shown. This takes 9 minutes and can be accompanied by either an audiocassette or a record. In the film strip students see people who have crossed the sex work barrier and who describe why they chose their career, what they do in their job, and how they feel about job stereotyping. The purpose is to help the students think about what they would like to do in a job rather than what other people think is traditional. The following questions were on a chart and the students were asked to consider these as they saw the film strip.

1. What non-traditional jobs are described in the film strip?

2. What reasons are given for selection?

3. Do you know anyone who has a non-traditional job?

The film strip shows persons who are working in non-traditional jobs in the actual job setting, (Part 1 - female apprentice aircraft - instrument mechanic - male kindergarten teacher - female jockey - female reporter - male in early childhood education). Each explains the strengths and attractions of his/her own job. The non-traditional jobs described in depth in Part 1 include those of a female carpenter and a male registered nurse. A very brief summary discussion followed the filmstrip.

Each student received an interview form with which to interview an adult, preferably a parent or guardian. However, the students may interview a neighbor, teacher, grandparent, or an older sibling or friend who is employed. The purpose of the interview is to obtain the opinions of parents or adults on: 1) what is important to the adult in his/her job; and 2) what the adult thinks a teenage boy and teenage girl should look for in a job. No names or code numbers were used on the adult questionnaire, and complete anonynimity of responses was assured. The interviews were to be completed by the next day so that a tabulation could be made of the responses of the adults.

The booklet An Equal Chance: A Parent's Introduction to Sex Fairness in Vocational Education was distributed to the students. Each student could keep the booklet and students were asked to review the booklet with their parents. In order to stimulate interest in the booklet, the following questions were printed on a large chart:

1. How many girls now in high school will work for pay outside the home at some time?

2. How many girls now in high school will work full-time outside the home for 30 years or more?

3. What percentage of mothers work for pay outside the home who have children under 6 years of age?

4. In what proportion of married couples do both the husband and wife work for pay outside the home?

5. What percentage of the students preparing for health careers as nurses, medical technicians and laboratory workers are men?

6. What percentage of the students preparing for careers in secretarial and clerical positions are men?

SUMMARY:

Students examined the booklets for responses to the questions listed above. The answers and the discussion summarized the main points: Almost all students now in high school will work for pay outside the home, that most students of each sex will work for pay for 30 years or more, and that increasing numbers of students are preparing for non-traditional occupations.

TEACHING AIDS:

Booklet: M. Matthews and S. McCune An equal chance: A parent's introduction to sex fairness in vocational education. Indiana State Advisory Council on Vocational Education, Suite 524 Illinois Building, 17 West Market Street, Indianapolis, Indiana 46204.

Film strip and cassette: Jobs and Gender. Guidance Associates, Communication Park, Box 300, White Plains, NY 10602.

Questionnaire: Student Survey #1. H. Veres, Cornell Institute for Occupational Education, Department of Education, Cornell University, Ithaca, NY 14853.

"Parent Opinion Survey on Career Decisions." H. Veres, Cornell Institute for Occupational Education, Department of Education, Cornell University, Ithaca, NY 14853.

CONCLUDING LESSON:
CAREER CHOICE AND NON-TRADITIONAL CAREERS

OBJECTIVES:

See first lesson.

MATERIALS:

Film strip and accompanying tape Jobs and Gender, Part 2; film strip projector; screen; cassette player; chalk and chalk board or large chart and markers; sufficient copies for each student of the following materials:

"Career Opportunities in the Eighties"

PREPARATION:

In preparation for the lesson the responses from the student interviews were tabulated for each class for Question #16 concerning the three most important reasons in selection of a future occupation or career. Students were asked to place a 1 in front of the most important reason, 2 in front of the next most important, 3 in front of the third most important, and the remaining statements would be left blank. When tabulating these results, a response was credited for a statement if it had either a 1st, 2nd, or 3rd rank. Therefore, the final tabulation consisted of the number of students in the class who ranked each item as either first, second or third. The list of the 12 reasons was printed on a large chart, and space was provided for completion during the class period of the responses of the students and responses of the parents for their advice to a teenage girl and to a teenage boy concerning what to consider in an occupation.

THE LESSON:

The introduction to the lesson involved responses from students concerning the interview with a parent or other adult. Discussion involved responses to the following questions:

Did you enjoy the interview?

Did your parent enjoy it?

Did you get new ideas from this interview?

The students were assured that there were no "right" answers to these interview questions, that responses from each parent might be different because the advice would reflect the unique interests and abilities of each student.

Emphasis was placed on this fact that we would expect to find differences among parents in what each likes in a job because they hold a wide variety of jobs.

The entire class assisted in tabulating and summarizing the results of the parent interview and student survey concerning what adults think teenage boys and teenage girls should look for in a job and what the students in their class wanted in a future career. Students were asked to estimate which responses they thought would be highest and lowest in this class and then the actual results of the tabulation were written on the chart or chalk board. Adult responses were tabulated by asking students to raise their hands for each item if the adult they interviewed had recommended this be considered by: 1) a teenage boy; and 2) a teenage girl. At the completion of the tabulation the students could see the number on the chart for each item selected by: 1) their classmates; 2) parents as a recommendation for teenage boys; and 3) parents as a recommendation for teenage girls.

Discussion after the tabulation focused on the following questions:

> Do you see differences or similarities between the opinions of the adults and the students?
>
> Do you see differences or similarities between the advice adults give to teenage girls and to teenage boys?

Since "Good salary" was the item receiving the highest or one of the highest responses, emphasis was placed on the need to stay in school, to graduate from high school, and to obtain as much education as possible since education is frequently a prerequisite to good salary.

Part 2 of the filmstrip Jobs and Gender was introduced. Two questions for the students to consider during the filmstrip were written on a chart or on the chalkboard.

> What non-traditional jobs are described?
>
> How does automation help women do jobs formerly done by men?

The showing of the filmstrip takes 9 minutes. Following the filmstrip the students discussed responses to the questions. Non-traditional jobs that were described included: a male kindergarten teacher, a female reporter, and a male early childhood educator. Students were asked which filmstrip they preferred, Part 1 or Part 2, and the reasons for their choice.

Students had been considering and examining career choice from the perspectives of interests, attitudes, skills and advice of parents or other adults. Another important aspect to consider is labor market demand and the projection for job opportunities in the coming decade. The pamphlet "Career Opportunities for the 1980's" was distributed to the students. The students examined this publication for the following highlights:

the increase in the number of women workers in the past 30 years;

the occupations and sectors of the economy that will show the greatest increase in new jobs available in the coming decade; and

the occupations and sectors of the economy that will have the greatest number of job openings in the coming decade.

SUMMARY:

The summary activity for the two lessons consisted of dividing the class into small discussion groups with 4 to 6 students in each group. Three questions were printed on the chalkboard or on charts. These questions were:

1. Which activity was most helpful? Why?

   Survey
   Filmstrip 1
   Filmstrip 2
   Adult Interview
   Printed Materials
   Discussion

2. Your group is in charge of classified ads for a newspaper. Mr. Simmons, who manufactures parts for government airplanes, calls you. He asks to place a "want ad" in your paper that says:

   - Male help wanted for stock inventory -

   What do you tell him?

3. "Eliminating sex-role stereotyping in employment would help both women and men." Do you agree or disagree? Why?

The class had been divided into small groups so students would not feel hesitant or embarrassed about expressing opinions. As the groups were discussing these items, the researchers and teacher went from group to group to assist with questions. At the end of the time available, one person from each small group summarized the opinion of the group on one question.

EVALUATION:

Students evaluated the class activities in their discussion groups. This evaluation was reported to classmates.

Another evaluation procedure was included in the survey that was administered to the students approximately one month after these class lessons. The following question requested student evaluation of the classroom activities and of the teaching aids.

	Not Helpful				Very Helpful	Can't Remember
Filmstrip, "Jobs and Gender"	1	2	3	4	5	6
Booklet, An Equal Chance: A Parent's Introduction to Sex Fairness in Occupational Education	1	2	3	4	5	6
Summary, "Career Opportunities for the Eighties"	1	2	3	4	5	6
Interview with parent or adult about careers	1	2	3	4	5	6
Class Discussions	1	2	3	4	5	6

A third means of evaluation is the measurement of change in attitude toward non-traditional jobs by those who participated in these lessons and the control group who did not have these lessons.

TEACHING AIDS:

Filmstrip and cassette: Jobs and Gender. Guidance Associates, Communications Park, Box 300, White Plains, NY 10602.

Pamphlet "Career Opportunities for the 1980s." A summary prepared by Damayanthi Herath and Eva Kaufman. Cornell Institute for Occupational Education, Department of Education, Cornell University, Ithaca, NY 14853.

"CAREER OPPORTUNITIES FOR THE 1980s"

A summary prepared by
Damayanthi Herath and
Eva Kaufman

Cornell Institute for Occupational Education
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CAREER OPPORTUNITIES FOR THE 1980s

An individual planning for a career must consider the changes that occur in the job market. Interests and abilities will determine which occupation attracts a person, but future economic and social conditions will determine what job opportunities will be available.

Although no one can predict the future with certainty, projections of job opportunities can be made by examining the recent past. The job market is subject to constant change and there are a number of factors which affect employment opportunities. These include changes in the population, technology and characteristics of the labor force.

Population

Three population trends that will affect future employment are decreased population growth, increased number of job seekers, and movement of people within the country. For example, because many young people have entered the labor force in recent years, competition for entry level jobs has increased. The result has been greater unemployment among young workers.

Technology

The introduction of new technology and business practices has both created and eliminated hundreds of thousands of jobs. For example, the computer has given birth to a whole new group of occupations -- programmers, systems analysts, equipment operators -- while at the same time cutting the need for clerical workers.

Labor Force

The labor force is made up of all the people competing for jobs. The labor force will continue to grow during the 1980s, but at a slower rate than in recent years. By 1990, about 119 million people will be entering the labor force. The labor force will increase more quickly than the number of available jobs, leading to greater competition for employment.

Education

Employers always wish to hire the best qualified workers available. This does not mean that they always choose those applicants with the most education. But job seekers should be aware that the education level of the labor force in general is rising. The result could be increased competition in many occupations.

A college degree and perhaps graduate or professional training are necessary for some careers. However, four years of college are not always required, or even appropriate, for many jobs. A two year program in a community college, technical institute, or trade or vocational school can also provide training for employment.

If one wishes to become an expert in a particular trade, a sure route is apprenticeship. Employers recognize apprenticeship an an especially thorough training method. Completing such a program increases one's chances for employment and advancement.

Women in the Work Force

One of the most spectacular changes in the American economy in the past few decades has been the dramatic increase in the number of women working for pay outside the home. This number jumped from less than 8 million in April 1950 to nearly 23 million in April 1960, 31 million in 1970, and 41 million in 1980.

Where to Look for Jobs in the 1980s

Service producing industry. Service occupations are those which provide some kind of service to others, without making a particular product. Employment in the service producing industry has been increasing at a faster rate than in the goods producing industry because:

- Rising income and living standards result in greater demand for schooling, health care, entertainment, and financial services.
- Growth of cities and suburbs bring a need for more local government services.
- Since many services involve personal contact, people are less likely to be replaced by machines in service producing industries.

Employment in the service producing industry is expected to increase 30% in the 1980s.

Recent trends and projections of the five industrial sectors that make up the service producing industries are as follows:

- Transportation and public utilities

  This is the slowest growing sector, mainly due to a declining need for employees in the railroad and water transportation industries. Other areas of transportation, such as air, local transit and trucking, will increase. Employment in transportation will rise about 7%.

- Trade

  Both wholesale and retail trade employment have increased as the population has grown. Although retail trade has grown more than wholesale, rising incomes have enabled people to buy a greater number and variety of goods. Between 1978 and 1990 wholesale and retail trade employment is expected to grow about 28%.

- Finance, insurance and real estate

  Within this sector the two fastest growing industries have been banking and credit. Between 1978 and 1990, employment in this sector is expected to rise about 34%.

- Services

  This category includes a variety of industries such as hotels, barber shops, automobile repair shops, business services, hospitals, and nonprofit organizations. Employment in this sector has grown faster than in any other. From 1978 to 1990, there is a projected increase of 53%.

- Government

  Increased demand for services provided by the government caused government employment to rise about 54% from 1965 to 1978. But because of low birth rates from 1960 to 1970, school enrollments will decline through the 1980s. Consequently, state and local governments will cut employment in schools. This sector is expected to rise only 13% by 1990.

Goods producing industry. These industries produce goods through farming, construction, mining and manufacturing. They employ less than one-third of the country's labor force.

- Agriculture

  In recent years, farms have increased their output by using more and better machinery, fertilizer, feeds, pesticides and hybrid plants. However, these same developments have decreased the need for workers. Between 1978 and 1990, agricultural employment is expected to drop about 12%.

- Mining

  As the development of fuel sources continues through the next decade, mining is expected to grow 20%.

- o Contract construction

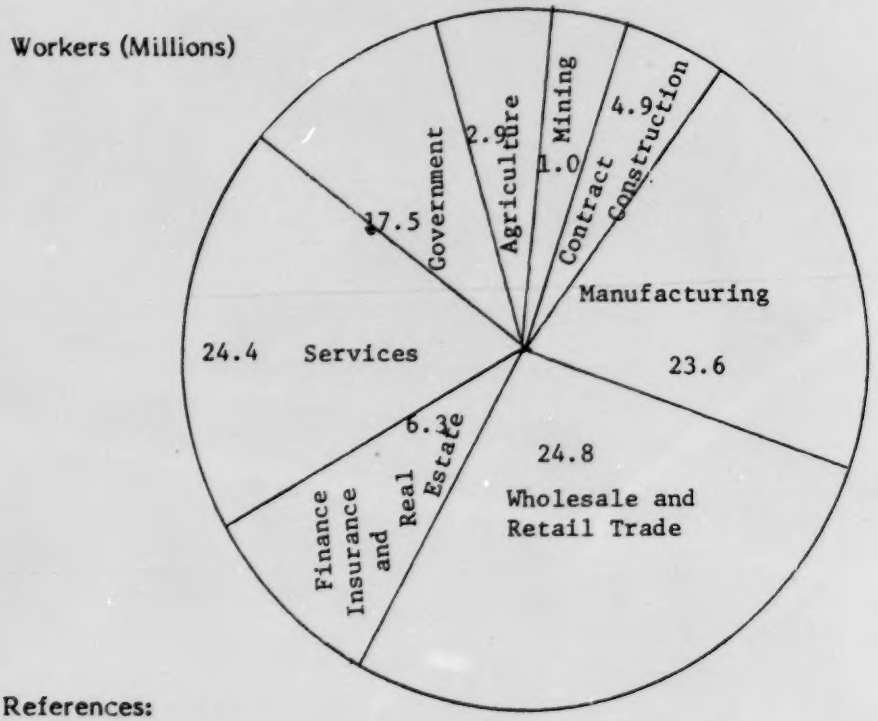
  Between 1978 and 1990, employment in this sector is expected to increase 17%.

- o Manufacturing

  This can be divided into two broad categories: durable goods and nondurable goods. Employment in durable goods is expected to increase about 19%, while employment in nondurable goods is expected to rise by only 11%.

The chart below will give you a picture of the projected distribution of employment in 1990.

Projected Distribution of Employment by Industry in 1990



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"Employment in Perspective: Working Women, Summary 1980." U.S. Department of Labor, Bureau of Labor Statistics. Report 643.

Tomorrow's Jobs, reprinted from the Occupational Outlook Handbook 1980-81 Edition. Washington, D.C.: U.S. Department of Labor. Bureau of Labor Statistics. Bulletin No. 2075-1. Superintendent of Documents, U.S. Government Printing Office.

Appendix D

RADIO PUBLIC SERVICE ANNOUNCEMENTS

NON-TRADITIONAL JOBS

PUBLIC SERVICE ANNOUNCEMENTS

Cut One
30-seconds

SOUND: HIGH SCHOOL HALLWAY BETWEEN CLASSES, VOICES, STEPS, LOCKERS BEING OPEN AND SHUT, THEN UNDER

BOY #1: A cooking class? You gotta be kidding!

BOY #2: I like to cook---and I'm good at it. Anyway, its food service.

BOY #1: Awww...that's women's work!

BOY #2: That's what you think! Lots of guys are becoming cooks, nurses, secretaries. You know Joe--he's taking bookkeeping this year. And Stan's in the nursing class....(FADES)

NARRATOR: He's right! There's no such thing as "men's work" or "women's work" anymore----just jobs to match a person's interests and abilities. Take a look at the choices at your high school guidance office or regional BOCES.

SOUND: UP AND OUT

NON-TRADITIONAL JOBS

PUBLIC SERVICE ANNOUNCEMENTS

Cut Two
30-seconds

NARRATOR:	What do <u>you</u> want to be?
YOUNG WOMEN'S VOICES:	A baker! A banker! A blacksmith! A carpenter! A computer operator! A construction worker! An electrician!
NARRATOR:	Nine out of ten women now in high school will work for pay outside the home some time in their lives --- most for 30 years or longer. Today's young women have a lot more career choices and chances.
YOUNG WOMEN'S VOICES:	A police officer! A plumber! A pilot!
NARRATOR:	What's stopping you from becoming all you can be? What do you want to be? Your high school guidance office or regional BOCES can help you find out.

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